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JAMES DONOVAN,

Superintendent of Streets.

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ANNUAL REPORT

OF THE

STREET DEPARTMENT

FOR THE

YEAR 1903

BOSTON
MUNICIPAL PRINTING OFFICE
1904

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REMOTE STORAGE

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Hon. Patrick A. Collins,
Mayor of the City of Boston:

Sir, — In compliance with the Revised Ordinances, the annual report of the operations and expenses of the Street Department for the year 1903 is herewith respectfully submitted.

Organization.

The work of the department during the past year has been carried on under the same organization that was effected when the consolidated department was created in 1891, and as amended in 1895, the several divisions of the department being as follows:

Central Office.	Paving Division.
Boston and Cambridge Bridges.	Sanitary Division.
Bridge Division.	Sewer Division.
Ferry Division.	Street-Cleaning Division.
	Street-Watering Division.

Each of the above divisions, with the exception of the Central Office and the Boston and Cambridge Bridges, is in charge of a Deputy Superintendent.

The Boston and Cambridge bridges are managed by two commissioners, the Superintendent of Streets being the commissioner for the City of Boston, the other commissioner being appointed by the Mayor of the City of Cambridge.

APPROPRIATIONS.

The money assigned for Street Department work for the past year was made available under the following appropriations:

First. — Maintenance: From income of the city raised by taxes. Previous to the commencement of the financial year, February 1, the department estimates of the amounts necessary for the proper maintenance of the various divisions are submitted to His Honor the Mayor, who makes such recommendation as he may deem proper to the City Council. The maintenance appropriations, as passed by the City Council, were as follows:

Central Office	$20,000 00
Bridge Division	175,000 00
Cambridge and Boston Bridges	17,000 00
Ferry Division	220,000 00
Paving Division	850,000 00
Sanitary Division	640,000 00
Sewer Division	275,000 00
Street-Cleaning Division	375,000 00
Street-Watering Division	165,000 00
Total	$2,737,000 00

Second. — Work done under appropriations for permanent improvements: There was made available by the City Council, from income of the city raised by taxes, for general new or reconstruction work, as follows:

Street Improvements	$500,000 00

Third. — Work done under appropriations for permanent improvements: There was made available by the City Council, from loans within the debt limit, for new work, as follows:

Paving Division	$230,000 00

Fourth. — In 1891 an Act was passed by the Legislature entitled "An Act Relating to the Location, Laying Out and Construction of Highways in the City of Boston." (Chapter 323, Acts of 1891, and amendments.) Loans under this Act previous to 1901 were outside the debt limit, but by chapter 199 of the Acts of 1901 the city was empowered to borrow the money inside the debt limit. From this fund new

streets, assessable on the abutting property, are built. The amount expended the past year was:

Sewers	$50,201 50
Streets	328,554 94
Total	$378,756 44

Fifth. — In 1897 an Act was passed by the Legislature entitled "An Act Relative to the Sewerage Works of the City of Boston." (Chapter 426.) Under this Act the loan is outside the debt limit. From this fund "Sewerage Works" are built.

The amount expended the past year was . . $993,424 68

Sixth. — In 1900 an Act was passed by the Legislature and accepted by the City Council entitled "An Act Relative to Laying Out and Constructing Highways in the City of Boston." (Chapter 478.) Under this Act the loan is inside the debt limit. From this appropriation all street and sewerage works construction in highways laid out previous to July 17, 1900, may be built.

The amount expended the past year was as follows:

Sewers	$92,545 89
Streets	37,985 90
Total	$130,531 79

Seventh. — In 1901 an Act was passed by the Legislature entitled "An Act Relative to Highways in the City of Boston." (Chapter 199.) Under this Act the loan is inside the debt limit. From this appropriation street and sewerage works construction in "323" streets may be built. The amount thus expended the past year was:

Construction of Highways Already Laid Out —	
Sewers	$210,935 43
Streets	9,089 17
Total	$220,024 60

Eighth. — In 1899 an Act was passed by the Legislature entitled "An Act Relative to Laying Out and Construction of Highways in the City of Boston." (Chapter 443.) Loans under this Act are outside the debt limit. The amounts expended last year in each district were as follows:

Brighton	$3,229 91
Dorchester	60,984 38
East Boston	51,502 39
Roxbury and West Roxbury	62,404 13
Total	$178,120 81

Ninth. — In 1903 an Act was passed by the Legislature entitled "An Act Relative to Separate Systems of Drainage." (Chapter 383.) Loans under this Act are outside the debt limit. The amount expended last year was $297,431.11.

Tenth. — In 1903 an Act was passed by the Legislature entitled "An Act to Authorize the Construction of a Dam Across the Charles River between the Cities of Boston and Cambridge." (Chapter 465.) The loan under this Act is outside the debt limit. The amount expended last year for sewerage works was $259,888.71.

The expenditures under the several appropriations for the year 1903 were as follows:

Maintenance	$2,875,850 23
Sewerage Works	993,424 68
Street Improvements	782,145 81
Highways, Making of	378,756 44
Separate Systems of Drainage	297,431 11
Charles River Basin	259,888 71
Construction of Highways Already Laid Out	220,024 60
Laying Out and Construction of Highways (Chapter 478 of 1900)	130,531 79
Laying Out and Construction of Highways, Brighton	3,229 91
Laying Out and Construction of Highways, Dorchester	60,984 38
Laying Out and Construction of Highways, East Boston	51,502 39
Laying Out and Construction of Highways, Roxbury and West Roxbury	62,404 13
Garbage Plant, Spectacle Island	50,000 00
Ferry Improvements	41,333 41
Dorchester street	21,015 14
Bridge, Specials	12,642 99
Hyde Park avenue	8,417 10
Carleton street	8,400 47
Brandon street and Belgrade avenue	6,740 22
Street Cleaning, Specials	3,350 00
Abolishment of Grade Crossings	2,125 46
Paving, Specials	255 04
Total	$6,270,454 01

From the moneys provided, as shown in the preceding schedule, the maintenance force of the department has been permanently and constantly employed during the year, and large amounts of work have been performed by contract, as required by the provisions of many of the Acts providing loans for expenditure by this department.

Specific features of the work are referred to under the headings which follow, and the work of the divisions is fully shown in the appendices attached to this report.

BRIDGE DIVISION.

Expenditures.

Maintenance.	Specials.
$171,779.52.	$12,642.99.

The Huntington-avenue bridge over the Boston & Albany railroad should be rebuilt at once, and a special appropriation for this purpose should be made, as a great amount of heavy teaming now passes over this bridge, and constant repairs have to be made to keep it open for travel.

The Shawmut-avenue bridge over the Boston & Albany and New York, New Haven & Hartford railroads will be completed during the coming year, and a much needed improvement will then have been made.

FERRY DIVISION.

Expenditures.

Maintenance.	Specials.
$254,535.23.	$41,333.41.

Considerable work has been done on the piers, slips, etc., of this division, and the Ferry-boat "Revere" has been kept in commission by constant repairs. This boat should be discontinued, and a new one provided to take her place. The coal-pocket at the North Ferry, East Boston side, should be torn down, and a modern pocket, with a capacity of at least 2,000 tons, erected to provide for the needs of the division during the winter. The average daily consumption of coal by this division is thirty tons per day, and at least 4,000 tons of coal should be on hand November 15 of each year in order to meet the demand during the winter.

PAVING DIVISION.

Expenditures.

Maintenance.	Specials.
$900,342.32..	$255.04.

Work has progressed on the boulevards and "323" streets and public alleys, and but few newly laid-out streets remain to be constructed.

Pitch and pebble joint paving on a concrete base has been laid on a number of down-town streets where teaming traffic is heavy, and bitulithic pavement has been laid in the residential districts under a ten-year maintenance guarantee.

This pavement gives good satisfaction and makes a smooth, noiseless pavement, easily cleaned, and affords good footing for horses, particularly on grades.

The crushers, yards, and rolling stock have received careful attention in the line of repairs, and are now in good condition with few exceptions.

SANITARY DIVISION.

Expenditures.

Maintenance.	Specials.
$654,975.87.	$50,000.

The work of this division has been greatly hampered by the scarcity of suitable dumping places, and the expense of handling material collected has been greatly increased in consequence.

Attention is again called to previous recommendations that additional dumping scows be provided at South yard, Albany street, and Charles River-avenue bridge; these dumping scows will lessen the length of haul for material collected, and will greatly facilitate the work of collecting.

A yard for the Dorchester district should be established at once and the contract system in this district abolished.

Money should be provided to properly overhaul and repair the stables in the South End and North End yards, which are now in very bad condition and a constant source of expense.

SEWER DIVISION.

Expenditures.

Maintenance.	Specials.
$288,679.26.	$1,552,869.96.

The work of separating surface water and sewage under the Act passed by the Legislature (chapter 383, 1903), has been carried on to a large extent, and particularly in the Dorchester District have a large number of surface sewers been built.

Work at the Pumping Station has progressed favorably, and during the coming year the new pump contracted for in 1900 will be erected and in working order.

The construction work in the Back Bay Fens, in connection with the Charles River Basin, has been pushed rapidly, and the conduits should be finished during the year and the gate-houses early in 1905, thus completing the work in the Back Bay Fens and solving a problem that has been occupying the attention of the city during the past ten years.

STREET CLEANING DIVISION.

Expenditures.

Maintenance.	Specials.
$403,626.11.	$3,350.

One of the most perplexing problems confronting this division is the paper, litter, etc., thrown by pedestrians and storekeepers into the public streets, and particularly in the down-town business section.

In previous reports attention has been called to this matter, but the evil seems to grow rather than lessen, and the co-operation of the Board of Police seems the only solution of the difficulty.

The lack of proper and easily accessible dumping places is a matter of much concern at the present time, and is a source of growing expense in the work of the division; the remedy seems to be dumping scows to be used by this and the Sanitary Division.

The South Boston force now clean a part of the Dorchester streets, but a Street Department yard should be established in Dorchester and the residents given what they demand — a street-cleaning force for the entire district.

The stables of the division need a thorough overhauling, and as a matter of economy the horses and rolling stock should be properly housed.

STREET WATERING DIVISION.

Expenditures.

Maintenance.

$164,104.74.

The watering service has been more satisfactory the past year, judging from the number of complaints, than ever before, and particularly in the business section has this been true. In order to properly water every public street in Boston an appropriation of $190,000 should be provided.

Recapitulation of Expenditures for the Twelve Months Ending January 31, 1904.

OBJECT OF APPROPRIATIONS.	Current Expenses.	Special Appropriations.	Totals.
Street Department:			
Central Office	$21,092 06		$21,092 06
Boston and Cambridge Bridges	16,715 12		16,715 12
Bridge Division	171,779 52	$12,642 99	184,422 51
Ferry Division	254,535 23	41,333 41	295,868 64
Paving Division	900,342 32	255 04	900,597 36
Sanitary Division	654,975 87	50,000 00	704,975 87
Sewer Division	288,679 26	1,552,869 96	1,841,549 22
Street Cleaning Division	403,626 11	3,350 00	406,976 11
Street Watering Division	164,104 74		164,104 74
Street Improvements		782,145 81	782,145 81
Highways, Making of		378,756 44	378,756 44
Construction of Highways Already Laid Out		220,024 60	220,024 60
Laying Out and Construction of Highways (chap. 478 of 1900)		130,531 79	130,531 79
Laying Out and Construction of Highways, Brighton		3,229 91	3,229 91
Laying Out and Construction of Highways, Dorchester		60,984 38	60,984 38
Laying Out and Construction of Highways, East Boston		51,502 39	51,502 39
Laying Out and Construction of Highways, Roxbury and West Roxbury		62,404 13	62,404 13
Dorchester Street		21,015 14	21,015 14
Hyde Park Avenue		8,417 10	8,417 10
Carleton Street		8,400 47	8,400 47
Brandon Street and Belgrade Avenue		6,740 22	6,740 22
Totals	$2,875,850 23	$3,394,603 78	$6,270,454 01

Financial Statement of the Street Department Appropriation.

February 1, 1903, to January 31, 1904.

Maintenance.

APPROPRIATIONS.	Appropriations and Transfers during 1903.	Revenue.	Total Credits.	Expenditures for the twelve months ending Jan. 31, 1904.
Street Department :				
Central office	[1] $21,092 06	.....	$21,092 06	$21,092 06
Bridge Division	[2] 171,091 23	$388 29	171,779 52	171,779 52
Boston and Cambridge Bridges,	[3] 16,715 12	.....	16,715 12	16,715 12
Ferry Division	[4] 254,535 23	.....	254,535 23	254,535 23
Paving Division	[5] 899,138 25	1,204 07	900,342 32	900,342 32
Sanitary Division	[6] 651,100 87	3,875 00	654,975 87	654,975 87
Sewer Division	[7] 288,038 05	641 21	288,679 26	288,679 26
Street Cleaning Division	[8] 403,626 11	.....	403,626 11	403,626 11
Street Watering Division	[9] 164,104 74	.....	164,104 74	164,104 74
Totals	$2,869,441 66	$6,408 57	$2,875,850 23	$2,875,850 23

[1] Appropriation $20,000 00
Transferred from Surplus Revenue 1,092 06
$21,092 06

[2] Appropriation $175,000 00
Transferred to Paving Division 3,908 77
$171,091 23

[3] Appropriation $17,000 00
Transferred to Paving Division 284 88
$16,715 12

[4] Appropriation $220,000 00
Transferred from Surplus Revenue 19,000 00
" " Reserve Fund 15,535 23
$254,535 23

[5] Appropriation $850,000 00
Transferred from Surplus Revenue 44,049 34
" " Bridge Division 3,908 77
" " Street Watering Division 895 26
" " Cambridge and Boston Bridges . . 284 88
$899,138 25

[6] Appropriation $640,000 00
Transferred from Surplus Revenue 11,100 87
$651,100 87

[7] Appropriation $275,000 00
Transferred from Surplus Revenue 8,000 00
" " Reserve Fund 5,038 05
$288,038 05

[8] Appropriation $375,000 00
Transferred from Reserve Fund 28,626 11
$403,626 11

[9] Appropriation $165,000 00
Transferred to Paving Division 895 26
$164,104 74

Comparative Table showing Cost of Maintenance of the Street Department since 1894.

DIVISION.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.	1899-1900.	1900-1901.	1901-1902.	1902-1903.	1903-1904.
Central Office.....	$20,884 29	$18,315 79	$18,781 85	$17,789 85	$19,186 24	$18,799 41	$19,994 66	$24,999 83	$20,386 04	$21,092 06
Bridge.....	130,137 21	119,716 00	119,963 55	126,529 32	129,253 03	120,408 72	138,580 56	170,866 18	164,082 13	171,789 52
Boston and Cambridge Bridges....	11,986 85	12,537 33	13,835 54	14,403 92	13,569 89	15,998 18	17,353 27	18,394 97	16,400 04	16,715 12
Ferry.....	.....	209,911 30	218,353 10	219,983 24	213,055 79	211,822 87	236,999 91	248,754 06	227,688 29	254,535 23
Paving.....	637,226 91	599,090 34	559,934 39	573,963 14	553,291 72	705,432 68	753,562 34	837,831 07	780,236 39	785,946 38
Removal of snow,	78,381 71	84,809 08	68,741 07	116,224 20	172,963 48	154,625 18	29,138 38	93,518 45	121,899 66	114,395 94
Sanitary.....	467,459 02	432,778 52	477,241 54	492,670 56	508,152 88	567,107 81	609,664 67	623,000 50	675,319 64	654,975 87
Sewer.....	304,133 40	280,596 07	276,615 25	295,522 25	337,376 27	347,133 64	362,060 24	345,669 05	301,743 69	288,679 26
Street Cleaning.....	301,477 44	305,998 50	310,266 39	309,993 38	316,052 73	322,951 15	339,747 23	356,445 72	392,802 09	403,626 11
Street Watering....	87,169 08	76,424 70	71,211 81	[2] 78,736 72	138,728 57	174,625 97	174,742 45	164,259 36	160,147 25	164,104 74
Totals.....	$2,038,855 91	[1]$2,140,177 63	[2]$2,134,944 49	[2]$2,245,816 68	[2]$2,401,630 60	[2]$2,638,905 61	[2]$2,681,843 71	$2,883,739 19	$2,860,705 22	$2,875,850 23

[1] For comparison, deduct Ferry Division, not shown before 1895-6.

[2] Not including water bills of $76,930.40, not previously paid by Street Watering Division.

List of Contracts from February 1, 1903, to January 31, 1904, made by the Street Department.

Paving Blocks.

CONTRACT.	Awarded to	Dated	Price per M. delivered on	
			Wharves.	Streets.
Large paving blocks, 500,000	Rockport Granite Company	April 25, 1903	$70 60	
Gutter paving blocks	Wm. Shea & Son	May 4, 1903		(a) $55 00 (b) 62 00
Gutter paving blocks	S. & R. J. Lombard,	May 4, 1903		(c) 68 00
Large paving blocks	S. & R. J. Lombard,	May 4, 1903		(c) 75 00
Large paving blocks	Thomas Lahey	May 4, 1903		(d) 70 00

(a) Streets in Dorchester. (b) Streets in South Boston, Roxbury, and Brighton. (c) Streets in Charlestown. (d) Streets in East Boston.

Bank Gravel and Sand.

DISTRICT.	Awarded to	Dated	Price double load of 40 cubic feet.	
			Gravel.	Sand.
South Boston	Frank J. Hannon	Feb. 28, 1903	$1 45	$1 48
East Boston	J. F. Brennan & Co.	Feb. 28, 1903	1 35	1 35
Charlestown	J. P. O'Riorden	Feb. 28, 1903	1 40	1 10
Brighton	J. H. Sullivan	Feb. 28, 1903	1 43	1 43
West Roxbury	Thos. F. Minton	Feb. 28, 1903	1 35	1 35
Dorchester	James McGovern	Feb. 28, 1903	1 52	1 30
Roxbury	William Gilligan	Feb. 28, 1903	1 65	1 65
City Proper: District 8	James McGovern	Feb. 28, 1903	1 66	1 30
City Proper: District 9	William Gilligan	Feb. 28, 1903	1 65	1 65
City Proper: District 10	J. P. O'Riorden	Feb. 28, 1903	1 60	1 20

NOTE. — Single loads to cost one-half of the foregoing prices.

Beach Gravel.

DISTRICT.	Awarded to	Dated	Price per ton, delivered on wharves.
City wharves	Timothy Murphy	Jan. 28, 1903	$0.80

Crosswalk Flagging.

CONTRACT.	Awarded to	Dated	Price per square foot.	
			On Wharves.	On Streets.
Granite.....	A. Ford & Son.....	Jan. 28, 1903....	$0.31½	$0.33½
North River....	M. H. Cuddihy & Sons.	Jan. 28, 1903....	.33½	.36
Granite.....	S. & R. J. Lombard....	July 7, 1903.....	.32	.34

Coal.

CONTRACT.	Awarded to	Dated	Price per ton, 2,240 lbs.
300 tons, Ferry Wharves.....	John Morrison Co.,	March 23, 1903..	$5 00
1,000 tons, Pumping Station, Dorchester.....	H. F. Kiley.....	March 31, 1903..	4 55
1,000 tons, Ferry Wharves.....	H. F. Kiley.....	March 31, 1903..	4 55
200 tons, Ferry Wharves.....	John Morrison Co.,	April 1, 1903....	5 00
700 tons, Ferry Wharves.....	W. K. Niver Coal Co.....	April 4, 1903....	4 10
700 tons. Pumping Station, Dorchester.....	W. K. Niver Coal Co.....	April 4, 1903....	4 10
1,500 tons, Pumping Station, Dorchester.....	H. F. Kiley.....	May 1, 1903.....	4 55
1,500 tons, Ferry Wharves.....	H. F. Kiley.....	May 1, 1903.....	4 55
1,500 tons, Ferry Wharves.....	W. K. Niver Coal Co.....	May 9, 1903.....	4 35
1,500 tons, Pumping Station, Dorchester.....	W. K. Niver Coal Co.....	May 9, 1903.....	4 35
1,500 tons, Ferry Wharves.....	H. F. Kiley.....	June 1, 1903.....	4 55
5,000 tons, Ferry Wharves.....	W. K. Niver Coal Co.....	Sept. 3, 1903.....	4 29
500 tons, Pumping Station, Dorchester.....	W. K. Niver Coal Co.....	Sept. 3, 1903.....	4 29

Edgestones.

CONTRACT.	Awarded to	Dated	Price per linear foot.
Furnishing 50,000 linear feet.....	Simpson Bros. Corp	April 28, 1903...	$0.70

Spruce Lumber.

DISTRICT.	Awarded to	Dated	Price per M. ft. B. M. rough.
South Boston	Curtis & Pope Lumber Co...	Jan. 27, 1903....	$22 50
East Boston	Curtis & Pope Lumber Co...	Jan. 27, 1903....	22 00
Charlestown	J. O. Wetherbee Co.	Jan. 27, 1903....	21 85
Brighton	G. Fuller & Son	Jan. 27, 1903....	22 00
West Roxbury	G. Fuller & Son	Jan. 27, 1903....	23 00
Dorchester	Curtis & Pope Lumber Co...	Jan. 27, 1903....	22 50
Roxbury	C.W. Leatherbee Lumber Co.	Jan. 27, 1903....	22 50
City Proper	C.W. Leatherbee Lumber Co.	Jan. 27, 1903....	21 75

Iron Castings.

CONTRACT.	Awarded to	Dated	Price per 100 lbs., delivered at yards.
Iron Castings	The Sessions Foundry Company	Jan. 28, 1903....	$1 84

Leasing Ledge Lots.

CONTRACT.	Lessors.	Dated	Price per ton. for stone removed.
[1] Lease of ledge on Columbia road, near Brunswick st.	W. J. Wilcox *et al.*,	March 22, and June 12, 1901.	$0.10
[2] Lease of ledge on Centre st., between Allandale and Walter sts.	Thomas Minton....	May 10, 1902....	.18
[2] Lease of ledge on Kenney st., near Day st.	James W. Kenney,	June 7, 1902.....	.17
[2] Lease of ledge on Rosseter st.,	William J. Emerson	July 14, 1902....	.18
[2] Lease of ledge on Heath st., near Day st.	Frederick Bleiler..	June 8, 1903	.18

[1] Expires March 22, 1906. [2] Expires February 1, 1904.

Lease of Land.

CONTRACT.	Lessors.	Dated	Terms.
Lease of a portion of Glendon Wharf and stable on said wharf	Blodgett & Whidden	May 14, 1900	$3,000 per pear and all taxes for 10 years.
Lease of a portion of Packard's Wharf	Widow and heirs of Henry C. Snow	June 20, 1900	4,000 per year for 10 years.
Lease of land and stable on Columbia road and Old Harbor st. (Sewer Division)	Charles T. Gallagher, Trustee	February 26, 1901	600 per year for 5 years.
Lease of land at Squantum park	Charles W. Clapp, Lessee	April 24, 1901	25 per year paid to city.
Lease of land, Spectacle Island, for location of Garbage Disposal Plant	N. Ward Company	November 7, 1901	10,000 per year for 10 years, to be paid for by the New England Sanitary Product Company.
Lease of land and stable on West First st. (Sanitary Division)	Albert G. and Emma B. Frost, Trustees	November 20, 1901	900 per year and water rates for 5 years.
Lease of land and stable on H and East Second sts. (Street Cleaning Division)	M. J. Mahoney *et ux*	December 28, 1901	900 per year for 5 years.
Lease of land and flats at Jeffries Point, East Boston, for maintaining a public landing	George C. Fitzpatrick	May 1, 1902	350 per year.
Lease of storehouses under Charlestown bridge	M. P. Coleman & Co., Lessee	March 12, 1902	728 per year paid to city.
Lease of wharf, Chelsea st.	J. F. Brennan & Co.	February 21, 1903	180 per year.

Collecting and Removing Ashes.

CONTRACT.	Awarded to	Dated	Price.
Collecting and removing ashes in the West Roxbury District	John J. Moore	April 8, 1903	$2,700 per year for 2 years.

Collecting and Removing House Offal.

Collecting and removing offal in the West Roxbury District	John Krug	March 30, 1903	$1,400 per year for 2 years.
Collecting and removing offal in the Brighton District	G. F. Farnum, Jr	June 2, 1903	2,000 per year for 2 years.

[1] Artificial Stone Sidewalks.

CONTRACTOR.	Dated	Price per Square Foot.	CONTRACTOR.	Dated	Price per Square Foot.
Simpson Bros. Corporation	March 26, 1903	$0.06	Warren Bros. Company	March 26, 1903	$0.06
W. A. Murtfeldt Company	March 26, 1903	.06	P. B. Elkins Company	May 18, 1903	.06
Carr & Andrews Corporation	March 26, 1903	.06	E. R. Taylor & Co	May 19, 1903	.06
Thomas J. Hind	March 26, 1903	.06			

[1] These walks are guaranteed by a surety company bond for ten (10) years from date of completion, and were laid on various public streets where the contractor had agreements with the abutters.

Furnishing and Laying Artificial Stone Sidewalks.

CONTRACT.	Awarded to	Dated	Price.
Copley sq	Warren Bros. Company	April 30, 1903	$0.15 per sq. ft.
Lindsey st	Warren Bros. Company	May 21, 1903	.17 per sq. ft.
Charlotte st	Simpson Bros. Corporation	June 9, 1903	.17 per sq. ft.
Moultrie st	Warren Bros. Company	July 13, 1903	.17 per sq. ft.
Spalding st	Warren Bros. Company	October 3, 1903	$750.00.

Paving with Trinidad Asphalt.

CONTRACT.	Awarded to	Dated	Price per Square Yard.
Dartmouth st., between Boylston and Newbury sts	Barber Asphalt Paving Co.	June 20, 1903	(A) $3.25; (B) $2.50.
Exchange pl	Barber Asphalt Paving Co.	November 16, 1903.	(B) $2.50; (C) $4.50.

EXPLANATION OF LETTERS.

(A) Furnishing and laying a 6-in. American cement concrete base and 1½-in. binder, and guaranteeing the same for a period of ten (10) years after completion. (B) Furnishing and laying a 2-in. wearing surface and a 1½-in. binder on existing concrete base, and guaranteeing the same for a period of ten (10) years after completion. (C) Furnishing and laying a 6-in. American cement concrete base.

Paving with Sicilian Rock Asphalt.

CONTRACT.	Awarded to	Dated	Price per Square Yard.
Public Alley No. 12, from Poplar st. to Public Alley No. 14.....	Boston Asphalt Co.....	July 20, 1903.....	(A) $3 25.

EXPLANATION OF LETTER.

(A) Furnishing and laying a 6-in. American cement concrete base and a 2-in. wearing surface, and guaranteeing same for a period of ten (10) years after completion.

Paving with Wooden Blocks.

CONTRACT.	Awarded to	Dated	Cost of contract, as per estimated quantities, not including materials furnished by the City.
Newbury st., between Massachusetts ave. and Hereford st....	Patrick McGovern.....	July 23, 1903.....	$12,500 00

Paving and Regulating.

Fifty-one (51) streets have been paved and regulated.

Sewers and Drains.

Three hundred and fifty (350) contracts for sewerage works have been executed and work started.

Macadam Roadways.

Macadam roadways were built on the following streets, under chapter 323 of the Acts of 1891, or special acts or amendments thereto:

Haverford street, from Cornwall street, 310 feet northeast.

Vicksburg street, between East First and East Second streets.

P street, between East Sixth street and Columbia road.

Charlotte street, between Blue Hill avenue and Bradshaw street.

Walk Hill street, between South and Washington streets.

Carleton street, between Yarmouth and West Newton streets.

Ridgemont street, from Allston Heights to west of Eleanor street.

Ritchie street, between Columbus avenue and Marcella street.

Millet street, between Talbot and Southern avenues.

Rosemont street, between Adams street and Gustine avenue.

Florida street, between Templeton and Ashmont streets.

Ainsley street, from Rosemont street, southerly.

Charles street, between Dorchester and Geneva avenues.

Tower street, between Hyde Park avenue and Forest Hills cemetery.

Walter street, between Centre and South streets.

St. Margaret street, between Boston and Roseclair streets.

Calder street, between Blue Hill avenue and Canterbury street.

Blanche street, between Green Hill and Preston streets.

Davenport street, between Columbus avenue and Tremont street.

Roseclair street, between Dorchester avenue and Boston street.

Dilworth street, between Northampton and Camden streets.

Elmont street, between Waterlow and Faxon streets.

Blandford street, between Commonwealth avenue and Boston & Albany railroad.

Dunreath street, from Aspen street, westerly.

Cummington street, between Blandford and Lawton streets.

Swallow street, between N and O streets.

Spalding street, between South street and the railroad.

Seymour street, between Canterbury street and Brown avenue.

Oswald street, between Calumet and Hillside streets.

Bitulithic Pavement.

Warren Brothers Company laid bitulithic pavement on the following streets:

Bowen street, between E and F streets.

Gainsborough street, between Huntington avenue and the railroad.

West Newton street, between Huntington and Columbus avenues.

Berkeley street, between Beacon and Boylston streets.

Maverick street, between London and Havre streets.

Silver street, between A and B streets.

Silver street, from E street, westerly.

West Fourth street, from E street, westerly.

E street, between Silver and West Fourth streets.

Dartmouth street, between Newbury and Beacon streets.

Massachusetts avenue, between Huntington and Columbus avenues.

Oneida street, between Harrison avenue and Albany street.

Street Construction under Chapter 323 of the Acts of 1891, or Special Acts or Amendments Thereto.

Telford-Macadam Roads.

Contract.	Awarded to	Dated	Cost of contract as per estimated quantities, not including materials furnished by the City.
Columbia road, between Covington and I sts.	H. P. Nawn	May 5, 1903	$23,638 20
Bennington st., between Saratoga st. and the Revere line	Coleman Bros.	May 22, 1903	39,055 20
Columbia road, between Old Colony ave. and Covington st.	Timothy F. Bradley	July 15, 1903	22,425 60

Pile-driving.

Contract.	Awarded to	Dated	Price.
Furnishing and driving spruce piles for sewer in Jersey st.	John T. Scully & Brother	March 18, 1903	$0.13½ per linear foot of pile driven.
Furnishing and driving spruce piles for sewer in Dilworth st.,	John T. Scully & Brother	April 22, 1903	.14½ per linear foot of pile driven.
Furnishing and driving spruce piles for sewer in Bennington st., Section 6, north side	W. H. Ellis	April 28, 1903	.22 per linear foot of pile driven.
Furnishing and driving spruce piles for sewer in Columbia road, between K and M sts.	George H. Cavanagh	April 28, 1903	.18 per linear foot of pile driven.
Furnishing and driving spruce piles for sewer in D st., between Dorchester ave. and Seventh st.	George H. Cavanagh	September 26, 1903	.18 per linear foot of pile driven.

Retaining Walls, Etc.

CONTRACT.	Awarded to	Dated	Price.
Wall and fence, P st	H. P. Nawn	May 4, 1903	$1,850 00
Retaining wall, fence and bulkhead, Blandford st	Patrick McGovern	May 6, 1903	1,800 00
Walls on Carleton st., between West Newton st. and Berwick pk	James J. Coughlan	May 13, 1903	1,300 00
Retaining wall, Cumberland st	Metropolitan Contracting Co	June 4, 1903	1,150 00
Retaining wall, Freeport st., at estate of Mary A. Regan	Coleman Brothers	December 4, 1903	4,000 00
Rubble wall, Dorchester st., at estate of Cyrus Alger heirs	Michael J. Collins	December 30, 1903	825 00

Moon Island Construction, Etc.

Piping regulators, valves, etc., pumping station, Calf Pasture,	The Lumsden & Van Stone Co	March 25, 1903	$4,850 00
Engine House, pumping station, Calf Pasture	Charles Logue	March 26, 1903	44,975 00
Setting stones for engine bed, pumping station, Calf Pasture,	James J. Coughlan	April 9, 1903	500 00
Building boiler, setting for one battery of three boilers, pumping station, Calf Pasture	F. J. Linehan & Co	May 29, 1903	1,565 00

Miscellaneous Agreements.

Contract.	Awarded to	Dated	Price.
Four (4) weighing machines at ferry head-houses	The National Automatic Weighing Machine Co	January 30, 1903	$250 00 paid to the city.
Reconstructing piers at the North Ferry, East Boston side	Lawler Bros	March 13, 1903	$4,250 00
Reconstructing wharf and docks on Roxbury Canal	John P. Cavanagh	March 16, 1903	24,700 00
Furnishing manganese steel screens, elevators, etc., for the Columbia road, Codman and Rosseter st. crushers	Taylor Iron and Steel Co	March 25, 1903	13,775 00
Repairing Trinidad Lake asphalt pavement	The Barber Asphalt Paving Co	April 1, 1903	$2 50 per square yard. $0.75 per square yard for concrete base.
Repairing Sicilian rock asphalt pavement	Boston Asphalt Co	April 1, 1903	$2 50 per square yard. $0.75 per square yard for concrete base.
Repairing pier, South Ferry, Boston side	W. H. Ellis	April 8, 1903	$776 00
Foundation for Gainsboro'-st. foot-bridge, over the New York, New Haven & Hartford Railroad	Metropolitan Contracting Co	April 1, 1903	1,979 00
Manganese steel elevator screens, etc., Bleiler ledge	Taylor Iron and Steel Co	May 1, 1903	4,075 00
Furnishing crushed stone, streets in Charlestown	S. & R. J. Lombard	May 4, 1903	1 40 per ton.
Asphalt sidewalks, Columbia-road bridge, over the New York, New Haven & Hartford Railroad	Warren Brothers Co	May 29, 1903	600 00
Bulkhead and wharf, Paving Division yard, Medford st., Charlestown	George Hayes & Co	June 1, 1903	2,840 00
Releasing city to all claims for damages caused by building bulkhead, platform, and filling solid wharf on Albany st	Grant Gately, Olive P. Gately, by Mary M. Gately, Guardian, and Grace G. Kane	July 24, 1903	
Altering office and carriage shed, street cleaning yard, Rutherford ave., Charlestown	F. J. Linehan & Co	September 3, 1903	2,911 00

Excavating trench for Oakland brook in private land between River st. and New York, New Haven & Hartford Railroad	Dorchester Construction Co.	September 25, 1903.	1,532 50
Removing the old New York, New Haven & Hartford Railroad bridge crossing, D st., between Dorchester ave. and West Eighth st.	John J. Reagan	September 28, 1903.	310 00
Permission to build a sewer under the tracks of the New York, New Haven & Hartford Railroad about 150 feet north of Ashland st.	New York, New Haven & Hartford Railroad Co.	October 14, 1903.	City to pay all expense of protecting tracks, etc., and all damages sustained by reason of said sewer being placed as aforesaid.
Abutments, Temple-st. bridge, under the tracks of the New York, New Haven & Hartford Railroad, to raise the branch track	Metropolitan Contracting Co.	October 26, 1903.	$30,000 00
Furnishing steel I-beams, Stony brook conduit, section 7, Back Bay Fens	Concrete Steel Engineering Co.	October 26, 1903.	$0.06½ per pound delivered.
Approaches to Franklin-st. subway	William Crane	October 28, 1903	$5,530 00
Building dam near Moore-st. outlet	The East Boston Co.	December 8, 1903.	The city to build dam, and save company harmless from all claims for damages while the dam remains.
Permission to build a culvert under the tracks of the Boston & Maine Railroad, about 1,300 feet northeast of Addison st.	Boston & Maine Railroad	January 12, 1904.	The city shall pay all expense of protecting tracks and all damages that may hereafter be sustained.
Iron railing, Franklin-st. subway	W. A. Snow & Co.	January 14, 1904.	$787 00
Permission to build a culvert under the tracks of the New York, New Haven & Hartford Railroad, 330 feet northeast of Butler st.	New York, New Haven & Hartford Railroad Co.	January 22, 1904.	The city shall pay all expense of protecting tracks and all damages that may hereafter be sustained.
Permission to cross the Boston & Albany Railroad tracks to build Section 2, Stony brook foul flow channel	The Boston & Albany Railroad Co. and the New York Central & Hudson River Railroad Co.	January 26, 1904.	The city shall pay all expense of protecting tracks, and must complete the work ninety (90) days from date of starting.

Street Mileage.

The following table shows the length of public highways and character of the pavements February 1, 1904:

DISTRICTS.	Asphalt.	Granite Block.	Wooden Block.	Plank on Bridges.	Brick.	Cobble.	Bitulithic.	Macadam.	Gravel.	Not Graded.	Totals.
Year 1902 report..	19.86	93.07	0.87	....	0.35	0.52	0.64	308.47	67.84	8.23	499.85
February 1, 1904.											
City Proper.....	16.01	43.25	0.62	0.64	0.34	0.39	1.27	22.91	0.09	0.26	85.78
Charlestown.....	0.30	10.64	....	0.20	....	....	....	12.30	.....	0.02	23.46
East Boston.....	0.05	5.31	....	0.19	....	0.13	0.03	17.56	4.69	....	27.96
South Boston.....	1.62	15.67	....	0.42	....	....	0.34	21.00	1.89	3.11	44.05
Roxbury.....	2.32	11.62	0.29	0.13	....	....	0.52	68.22	5.66	1.31	90.07
West Roxbury...	.....	0.61	....	0.09	....	....	....	63.15	16.64	0.76	81.25
Dorchester.....	.....	5.71	....	0.21	0.04	....	....	85.20	13.79	0.32	105.27
Brighton	0.03	.....	....	0.35	....	....	....	27.41	14.76	....	42.55
Totals.....	*20.33	†92.81	0.91	2.23	0.38	0.52	2.16	317.75	57.52	5.78	500.39

NOTE.—The above districts refer to areas enclosed by the original boundary lines.
*Of this amount 0.22 miles = asphalt blocks.
† Of this amount 14.75 miles = granite block paving on concrete base.
4.71 miles of public alleys, chap. 298, Acts of 1898, included in this table.
In addition to this table there are 0.51 miles accepted foot passageways.

Total length of public streets, 500.39 miles.

There have been laid out and accepted by the Street Commissioners during the year 0.95 linear miles of public streets; corrections to previous measurements on account of revision and other causes show a decrease of 0.41 miles, making a total net increase of 0.54 miles.

The rate of increase from year to year is shown in the following table:

1859.....111.50 miles.	1882.....359.85 miles.	1894.....447.65 miles.
1871.....201.32 "	1883.....367.99 "	1895.....452.12 "
1872.....207.40 "	1884.....374.10 "	1896.....456.11 "
1873.....209.24 "	1885.....379.60 "	1897.....459.12 "
1874.....313.90 "	1886.....383.55 "	1898.....471.19 "
1875.....318.58 "	1887.....390.30 "	1899.....479.47 "
1876.....327.50 "	1888.....392.72 "	1900.....489.55 "
1877.....333.20 "	1889.....397.84 "	1901.....491.85 "
1878.....340.39 "	1890.....404.60 "	1902.....496.90 "
1879.....345.19 "	1891.....409.60 "	1903....**499.85** "
1880.....350.54 "	1892.....434.59 "	1904.....500.39 "
1881.....355.50 "	1893.....443.34 "	

Area of Pavements.

The following Table shows the Area of Pavements in Square Yards by Districts.

Districts.	Asphalt.	Granite Block.	Wooden Block.	Plank on Bridges.	Brick.	Cobble.	Bitulithic.	Macadam.	Gravel.	Not Graded.	Totals.
February 1, 1904..... ...	327,862	2,057,211	23,757	.....	3,308	6,830	9,878	5,635,014	1,053,072	247,304	9,364,236
City Proper.....	249,203	938,649	16,786	15,592	3,177	3,880	27,740	426,280	1,276	6,937	1,689,520
Charlestown.....	4,890	244,992	.....	5,224	.....	.....	.....	182,121	.....	275	437,502
East Boston.....	600	116,774	.....	2,763	.....	2,950	620	363,340	84,734	14,499	586,280
South Boston.....	20,168	349,576	.....	9,436	.....	.....	3,806	374,320	42,282	73,401	872,989
Roxbury.....	52,456	259,886	6,867	3,609	.....	.....	9,552	1,234,635	81,791	25,625	1,674,421
West Roxbury.....	.....	13,723	....	1,847	.....	.....	.....	1,045,883	256,287	54,588	1,372,328
Dorchester.	.....	118,784	.....	4,416	493	.....	.....	1,509,553	217,484	25,639	1,876,369
Brighton.....	1,686	.....	.....	5,484	.....	.....	.....	693,137	215,134	.....	915,441
Totals.....	*329,003	†2,042,384	23,653	48,371	3,670	6,830	41,718	5,829,269	898,988	200,964	9,424,850

Note. — The above districts refer to areas enclosed by the original boundary lines.

* Of this amount 2,537 square yards = asphalt blocks.

† Of this amount 366,071 square yards = granite block paving on concrete base.

24,334 square yards of public alleys laid out under chap. 298, Acts of 1898, included in this table.

In addition to this table there are 4,072 square yards accepted foot passageways.

CENTRAL OFFICE DIVISION.

EXPENSES OF THE CENTRAL OFFICE.

For the current expenses of the Central Office the City Council appropriated the sum of twenty thousand (20,000) dollars, to which was transferred from "Surplus Revenue" the sum of one thousand ninety-two dollars and six cents ($1,092.06), making a total appropriation of twenty-one thousand ninety-two dollars and six cents ($21,092.06), which was expended as follows:

Salaries	$17,500 00
General office expenditures . . .	3,592 06
Total	$21,092 06

Respectfully submitted,

JAMES DONOVAN,
Superintendent of Streets.

PART II.

APPENDICES.

PAGES 1 TO 165.

APPENDIX A.

REPORT OF THE DEPUTY SUPERINTENDENT OF THE BRIDGE DIVISION.

926, 927 AND 928 TREMONT BUILDING,
BOSTON, February 1, 1904.

HON. JAMES DONOVAN,

Superintendent of Streets, Boston:

DEAR SIR, — I respectfully submit herewith the annual report of the expenditures, income, and operations of the Bridge Division of the Street Department for the financial year ending January 31, 1904.

There are in the City of Boston 153 bridges, not including culverts. Eight of these, namely, Harvard, Craigie, West Boston, Prison Point, Cambridge, Essex street, Western avenue to Cambridge, and North Harvard street, all connecting Boston and Cambridge, are in charge of two commissioners, one of whom is appointed by the Mayor of the City of Boston, and the other by the Mayor of the City of Cambridge.

One hundred and thirteen bridges are supported wholly or in part by the City of Boston, 28 of these being tide-water bridges, provided with a draw.

Forty bridges are supported wholly by railroad corporations.

There are 13 important tide-water bridges, namely, Mt. Washington avenue, operated by hand power; Malden, Charlestown, Summer street, Chelsea North, Dover street, Federal street, and Meridian street, operated by electricity; Warren, Broadway, Congress street, L street, and Chelsea South, operated by steam power.

The force employed on the tide-water bridges work on an 8-hour basis, which necessitates the employment of 9 men on each of 12 bridges, and 12 men on the Charlestown bridge, making a total force of 120 men employed on the 13 principal drawbridges.

Repairs have been made on the different bridges at various times; the operating machinery on the drawbridges has been

frequently inspected and such repairs made as were needed, and the surfaces and structures of the different inland bridges have received attention from time to time as the necessity arose, and all defects have been promptly and properly remedied.

As recommended in report of last year, a special appropriation has been provided for the construction of a new bridge over the Boston & Albany railroad at Shawmut avenue, and the present bridge will in due time be replaced by a new structure.

An appropriation should be made during the coming year to rebuild Huntington-avenue bridge over the Boston & Albany railroad. From an inspection made by the City Engineer when this bridge was last repaired, there is no doubt but that public safety demands that it be rebuilt.

Repectfully submitted,

J. P. LOMASNEY,
Deputy Superintendent.

OBJECT OF EXPENDITURES.

ADMINISTRATION.

Office expenses:		
Printing and stationery	$671 33	
Sundry office expenses	481 08	
		$1,152 41
Salaries, Deputy Superintendent and clerical force		6,398 34
Salaries, Supervisors		3,155 75
Telephones: office, yards and Deputy's house		474 12
Amount expended, administration		$11,180 62

MAINTENANCE EXPENDITURES.

Administration	$11,180 62
On tide-water bridges	129,783 30
On inland bridges	12,880 58
North yard and stable	8,771 36
South yard and stable	9,163 66
Total	$171,779 52

FINANCIAL STATEMENT.

MAINTENANCE APPROPRIATION.

Appropriation, 1903–04	$175,000 00
Received from Boston & Albany Railroad Company, for work done in 1903	688 29
Total	$175,688 29
Amount of expenditures from February 1, 1903, to January 31, 1904	$171,779 52
Transfer to Paving Division	3,908 77
Total	$175,688 29

SPECIAL APPROPRIATIONS IN CHARGE OF BRIDGE DIVISION.

NAME OF APPROPRIATION.	Appropriations and Balances.	Expended, Feb. 1, 1903, to Jan. 31, 1904.	Balance on hand Jan. 31, 1904.
Congress-street bridge, repairs	$2,081 14	$1,105 29	$975 85
Construction of piers, Bridge Division,	8,542 01	6,962 53	1,579 48
Cottage-street bridge, improvement of,	1,584 57	1,584 57	
Electrical installation and construction, Bridge Division	1,861 42	930 25	931 17
New trucks, Bridge Division	1,100 00		1,100 00
Totals	$15,169 14	$10,582 64	$4,586 50

Amount of expenditures February 1, 1903, to January 31, 1904	$10,582 64
Balances	4,586 50
Amount of appropriations	$15,169 14

AMOUNTS CHARGED TO SPECIAL APPROPRIATIONS IN CHARGE OF OTHER DIVISIONS.

Laying out and construction of highways, East Boston	$2,172 33
Highways, making of	192 22
Reserve fund	84 13
Total expended	$2,448 68
Amount expended and charged to maintenance appropriation	$171,779 52
Amount expended and charged to Bridge Division, specials	10,582 64
Amount expended and charged to appropriations in charge of other divisions	2,448 68
Grand total of expenditures, February 1, 1903, to January 31, 1904	$184,810 84

INCOME.

The amount of bills deposited with the City Treasurer during the year was $758.16; and the amount received by the City Collector on account of the Bridge Division during the same period was $1,637.84.

The following is a list of the amounts expended on the different bridges in charge of this division:

TIDE-WATER BRIDGES.

NAME OF BRIDGE.	Repairs. Labor and Material.	Regular Expenses. Salaries, Fuel, and Supplies.	Totals.
Broadway	$676 46	$8,090 56	$8,767 02
Charlestown	1,477 42	11,647 39	13,124 81
Chelsea (north)	1,172 46	7,831 05	9,003 51
Chelsea (south)	1,685 42	8,346 54	10,031 96
Chelsea street	83 95	320 65	404 60
Commercial Point (or Tenean)	153 45	50 00	203 45
Congress street	1,776 99	8,393 52	10,170 51
Dover street	1,225 13	7,869 60	9,094 73
Federal street	991 86	7,952 61	8,944 47
Granite	291 81	239 20	531 01
L street	530 17	8,682 67	9,212 84
Malden	608 12	7,753 88	8,362 00
Meridian street	764 47	7,743 48	8,507 95
Mt. Washington avenue	687 83	8,162 40	8,850 23
Neponset	167 46	399 48	566 94
North Beacon street	37 91	99 84	137 75
Summer street	1,158 46	8,721 38	9,879 84
Warren	1,173 80	9,071 92	10,245 72
Western avenue	184 65	124 55	309 20
Winthrop	481 80	100 00	581 80
Sundry expenditures	687 27	1,322 07	2,009 34
Public landings:			
Chelsea (south)	218 62		
Jeffries Point		350 00	
East Boston		275 00	843 62
Totals	$16,235 51	$113,547 79	$129,783 30

TABLE SHOWING EXPENDITURES ON THE INLAND BRIDGES FROM FEBRUARY 1, 1903, TO JANUARY 31, 1904.

NAME OF BRIDGE.	Repairs. Labor and Materials.
Albany street	$1,446 31
Allston	213 33
Ashland street (culvert)	309 67
Ashland street	657 45
Athens street	150 90
Beacon street	254 83
Beech street (culvert)	13 50
Berkeley street	123 80
Bennington street	23 45
Blakemore street	124 05
Bolton street	28 66
Boylston street	258 70
Broadway	79 46
Brookline avenue	159 64
Byron street	155 19
Central avenue	1,138 82
Columbus avenue	708 25
Cottage street	1,831 26
Dartmouth street	178 71
Dorchester avenue	162 76
Dorchester street	73 35
Elmwood street	153 27
Everett street	8 00
Ferdinand street	3 25
Florence street	23 00
Gardner street (culvert)	23 64
Gold street	2 50
Harvard street (sidewalks)	7 00
Huntington avenue	398 31
Ipswich street	6 70
Irvington street	13 00
Keyes street	43 33
Massachusetts avenue (over B. & A. R.R.)	189 04
Massachusetts avenue (over N. Y., N. H. & H. R.R., Providence Division)	139 15
Perkins street	14 51
Shawmut avenue	154 29
Southampton street	403 91
Spring street	1 25
West Fourth street	1,516 13
West Newton street	139 43
Williams street	52 06
Charles River avenue (approach to old bridge)	235 70
Sundry expenditures on inland bridges	1,261 02
Total expenditures on inland bridges	$12,880 58

MAINTENANCE EXPENSES AT NORTH AND SOUTH YARDS.

District No. 1, Warren Bridge.

North Yard	$5,209 35
North Stable	3,562 01
Total expended, North Yard and Stable	$8,771 36

District No. 2, 168–170 Broadway Extension, South Boston.

South Yard	$4,063 88
South Stable	5,099 78
Total expended, South Yard and Stable	$9,163 66

LIST OF BOSTON BRIDGES.

I. — BRIDGES WHOLLY MAINTAINED BY BOSTON.

[In the list those marked with an asterisk (*) are over navigable waters, and are each provided with a draw.]

In Charge of Bridge Division.

Allston, over Boston & Albany Railroad at Cambridge street, Brighton.
Ashland street, over N. Y., N. H. & H. Railroad, Providence Division, West Roxbury.
Athens street, over N. Y., N. H. & H. Railroad, Midland Division.
Baker street, at Brook Farm, West Roxbury.
Beacon street, over outlet to Back Bay Fens.
Beacon street, over Boston & Albany Railroad.
Bennington street, over Boston, Revere Beach & Lynn Railroad.
Berkeley street, over Boston & Albany Railroad.
Berwick park (foot-bridge), over N. Y., N. H. & H. Railroad, Providence Division.
Blakemore street, over N. Y., N. H. & H. Railroad, Providence Division.
Bolton street, over N. Y., N. H. & H. Railroad, Midland Divison.
Boylston street, over Boston & Albany Railroad.
*Broadway, over Fort Point channel.
Broadway, over Boston & Albany Railroad.
Brookline avenue, over Boston & Albany Railroad.
Byron street, over Boston, Revere Beach & Lynn Railroad.
Charlesgate, over Ipswich street.
* Charlestown, from Boston to Charlestown.

* Chelsea [South] over south channel, Mystic river.
* Chelsea street, from East Boston to Chelsea.
Columbus avenue, over Boston & Albany Railroad.
* Commercial Point, or Tenean, Dorchester.
* Congress street, over Fort Point channel.
Cottage Farm, over Boston & Albany Railroad, at Commonwealth avenue.
Cottage street (foot-bridge), over flats, East Boston.
Dartmouth street, over Boston & Albany Railroad.
* Dover street, over Fort Point channel.
Elmwood street (private way), over Stony brook, Roxbury.
* Federal street, over Fort Point channel.
Ferdinand street, over Boston & Albany Railroad.
Florence street, over Stony brook, West Roxbury.
Gold street (foot-bridge), over N. Y., N. H., & H. Railroad, Midland Division.
Huntington avenue, over Boston & Albany Railroad.
Hyde Park avenue, over Stony brook, West Roxbury.
Ipswich street, over waterway.
Irvington street (foot-bridge), over N. Y., N. H. & H. Railroad, Providence Division.
Keyes street, over Stony brook, West Roxbury.
* L street, over reserved channel at junction of Summer and L streets.
Linden Park, over Stony brook, Roxbury.
* Malden, from Charlestown to Everett.
Massachusetts avenue, over Boston & Albany Railroad.
Massachusetts avenue, over N. Y., N. H. & H. Railroad, Providence Division.
* Meridian street, from East Boston to Chelsea.
* Mt. Washington avenue, over Fort Point channel.
Shawmut avenue, over Boston & Albany and N. Y., N. H. & H. Railroad, Providence Division.
Silver street, over N. Y., N. H. & H. Railroad, Midland Division.
Southampton street, east of N. Y., N. H. & H. Railroad, Midland Division.
Southampton street, west of N. Y., N. H. & H. Railroad, Midland Division.
Summer street, over A street.
Summer street, over B street.
Summer street, over C street.
* Summer street, over Fort Point channel.
* Warren, from Boston to Charlestown.
West Newton street, over N. Y., N. H. & H. Railroad, Providence Division.
West Rutland square (foot-bridge), over N. Y., N. H. & H. Railroad, Providence Division.
Williams street, over Stony brook, West Roxbury.
Winthrop, from Breed's Island to Winthrop.

In Charge of Park Department.

Agassiz, in Fens.
Audubon, in Riverway, over Boston & Albany Railroad.
Boylston, in Fens, over waterway.
Bridle-path, in Riverway, over Muddy river.
* Castle Island, in Marine Park, South Boston to Castle Island.
Chapel Arch, in Riverway.
Charlesgate, in Fens, over Boston & Albany Railroad.
Commonwealth avenue, in Fens, over waterway.
Ellicott Arch, in Franklin Park.
Fen, in Fens.
Forest Hills, in Franklin Park.
Leverett Pond (foot), in Leverett Park.
Neptune, in Wood Island Park, over Boston, Revere Beach & Lynn Railroad.
Overlook Arch, in Franklin Park.
Railroad Viaduct, in Arborway.
Scarboro', in Franklin Park.
Scarboro' pond (foot), in Franklin Park.
Stony brook, in Arborway.
Stony brook, in Fens.
Wood Island (foot), in Wood Island Park.

In Charge of Public Grounds Department.

Public Garden (foot-bridge).

II. — BRIDGES OF WHICH BOSTON MAINTAINS THE PART WITHIN ITS LIMITS.

In Charge of Bridge Division.

Central Avenue, from Dorchester to Milton.
* Chelsea [North], from Charlestown to Chelsea.
* Granite, from Dorchester to Milton.
Mattapan, from Dorchester to Milton.
Milton, from Dorchester to Milton.
* Neponset, from Dorchester to Quincy.
* North Beacon street, from Brighton to Watertown.
Spring street, from West Roxbury to Dedham.
* Western avenue, from Brighton to Watertown.

In Charge of Park Department.

Bellevue, in the Riverway, over Muddy river.
Brookline avenue, in the Riverway, over Muddy river.
Chapel, in the Riverway, over Muddy river.
Longwood, in the Riverway, over Muddy river.
Tremont street, in the Riverway, over Muddy river.

III. — BRIDGES OF WHICH BOSTON PAYS A PART OF THE COST OF MAINTENANCE.

In Charge of Bridge Division.

Albany street, over Boston & Albany Railroad.
Ashmont, junction Dorchester avenue and Talbot avenue, over N. Y., N. H. & H. Railroad, Plymouth Division (75 feet south of northerly end).
Dorchester street, over N. Y., N. H. & H. Railroad, Plymouth Division.
Harvard street, over N. Y., N. H. & H. Railroad, Midland Division (sidewalks).

In Charge of Commissioners of Cambridge Bridges.

* Cambridge street, from Brighton to Cambridge.
* Craigie's, from Boston to Cambridge.
* Essex street, from Brighton to Cambridge.
* Harvard, from Boston to Cambridge.
* North Harvard street, from Brighton to Cambridge.
* Prison Point, from Charlestown to Cambridge.
* West Boston, from Boston to Cambridge.
* Western avenue, from Brighton to Cambridge.

IV. — BRIDGES OF WHICH BOSTON MAINTAINS THE WEARING SURFACE.

In Charge of Bridge Division.

Boston street, over N. Y., N. H. & H. Railroad, Plymouth Division.
Cambridge street, over Boston & Maine Railroad.
Chelsea bridge, over Boston & Maine Railroad.
Dorchester avenue, over N. Y., N. H. & H. Railroad, Plymouth Division.
Everett street, over Boston & Albany Railroad, Brighton.
Perkins street (foot-bridge), over Boston & Maine Railroad.
Summer street, over N. Y., N. H. & H. Railroad, Midland Division.
Southampton street, over N. Y., N. H. & H. Railroad, Plymouth Division.
West Fourth street, over N. Y., N. H. & H. Railroad, Plymouth Division.

V. — BRIDGES MAINTAINED BY RAILROAD CORPORATIONS.

1st. — Boston & Albany Railroad.

Harrison avenue.
Market street, Brighton.
Tremont street.
Washington street.

2d. — Boston & Maine and Boston & Albany Railroads.

Main street.
Mystic avenue.

3d. — Boston & Maine Railroad, Eastern Division.

Wauwatosa avenue, East Boston.

4th. — Boston, Revere Beach & Lynn Railroad.

Everett street.

5th. — New York, New Haven & Hartford Railroad, Midland Division.

Dorchester avenue.
Morton street, Dorchester.
Norfolk street, Dorchester [North].
Norfolk street, Dorchester [South].
Washington street, Dorchester.
West Broadway.
West Fifth street.
West Fourth street.
West Second street.
West Sixth street.
West Third street.

6th. — New York, New Haven & Hartford Railroad, Plymouth Division.

Adams street.
Freeport street.
Medway street.
Savin Hill avenue.

7th. — New York, New Haven & Hartford Railroad, Providence Division.

Albany street (new part).
Beech street, West Roxbury.
Bellevue street, West Roxbury.
Berkeley street (new part).
Broadway (new part).
Canterbury street, West Roxbury.
Castle street.
Centre and Mt. Vernon streets, West Roxbury.
Chandler street.
Columbus avenue (new part).
Dartmouth street (new part).
Dudley avenue, West Roxbury.

Ferdinand street (new part).
Harrison avenue (new part).
Park street, West Roxbury.
Tremont street (new part).
Washington street (new part).

RECAPITULATION OF BRIDGES.

I.	Number wholly maintained by Boston:		
	In charge of Bridge Division . . .	57	
	In charge of Park Department . . .	20	
	In charge of Public Grounds Department,	1	
		—	78
II.	Number of which Boston maintains the part within its limits:		
	In charge of Bridge Division . . .	9	
	In charge of Park Department . . .	5	
		—	14
III.	Number of which Boston pays a part of the cost of maintenance:		
	In charge of Bridge Division . . .	4	
	In charge of Commissioners of Boston and Cambridge Bridges	8	
		—	12
IV.	Number of which Boston maintains the wearing surface:		
	In charge of Bridge Division . . .		9
V.	Number maintained by railroad corporations:		
	1. Boston & Albany	4	
	2. Boston & Maine and Boston & Albany Railroads	2	
	3. Boston & Maine, Eastern Division .	1	
	4. Boston, Revere Beach & Lynn . .	1	
	5. New York, New Haven & Hartford, Midland Division	11	
	6. New York, New Haven & Hartford, Plymouth Division	4	
	7. New York, New Haven & Hartford, Providence Division . . .	17	
		—	40
	Total number		153

PUBLIC LANDING-PLACES.

The following public landing-places have been built by the city, and are maintained and controlled by the Bridge Division:

East Boston Public Landing. — Size, 18×30. Built in 1893. Moored at dock of the Atlantic Works. Dock and flats leased at $250 per year.

Jeffries Point, East Boston. — Size, 20×50. Moored from Fitzpatrick's Wharf; $350 per year.

CABLE-HOUSES AND BOXES.

The following is a list of cable-houses and boxes on bridges in charge of this division:

New England Telephone and Telegraph Company:
- Chelsea [South] bridge, 1 house.
- Congress-street bridge, 2 houses.
- Dover-street bridge, 2 houses or boxes.
- Chelsea [North] bridge, 1 box.
- Chelsea-street bridge, 1 box.
- Malden bridge, 4 boxes.
- Meridian-street bridge, 2 boxes.
- Neponset bridge, 2 boxes on poles.
- Warren bridge, 2 boxes.

American Telephone and Telegraph Company:
- Federal-street bridge, 1 house.
- Mt. Washington-avenue bridge, 2 boxes.
- Neponset bridge, 1 box on pile.
- Summer-street bridge, 1 box.

Merchants' Telegraph Company:
- Congress-street bridge, 2 boxes.

Postal Telegraph Cable Company:
- Congress-street bridge, 2 houses.
- Malden bridge, 2 boxes.
- Warren bridge, 2 boxes.

Boston Electric Light Company:
- Congress-street bridge, 2 boxes.

Lynn and Boston Railroad Company:
- Chelsea [North] bridge, 4 boxes.
- Chelsea [South] bridge, 8 boxes.

Boston Elevated Railway Company:
- Cambridge-street bridge, 1 house.
- Dover-street bridge, 1 house, 1 box.
- Federal-street bridge, 2 houses.
- Malden bridge, 2 houses.
- Warren bridge, 2 houses.

Boston Police Department:
- Chelsea [South] bridge, 1 box.
- Malden bridge, 2 boxes.

Boston Fire Department:
- Chelsea [North] bridge, 1 box.
- Dover-street bridge, 1 house, 1 box.
- Meridian-street bridge, 2 boxes.
- Warren bridge, 2 boxes.

LAND AND BUILDINGS IN CHARGE OF BRIDGE DIVISION.

Broadway Bridge. — Draw-house, engine-room, and storehouse. Land, Broadway and Dorchester avenue, containing 5,516 feet, on which is a brick stable and workshop.

Charlestown Bridge. — Draw-house, electrical power-room, and six storehouses.

Chelsea [North] Bridge. — Draw-house, storehouse and tool-house.

Chelsea [South] Bridge. — Draw-house, engine-house and tool-house.

Chelsea-street Bridge — Tool-house.

Congress-street Bridge. — Draw-house, storehouse, tool-house and two shelter-houses.

Cottage-street (foot bridge). — Watchman's house.

Dover-street Bridge. — Draw-house and storeroom.

Federal-street Bridge. — Draw-house, tool-house, two motor-houses, one controller-house.

L-street Bridge. — Draw-house, engine-house.

Malden Bridge. — Draw-house and tool-house.

Meridian-street Bridge. — Draw-house, tool-house and store-house.

Mt. Washington-avenue Bridge. — Draw-house and tool-house.

Neponset Bridge. — Tool-house.

Summer-street Bridge. — Draw-house, controller-house, two shelter-houses.

Warren Bridge. — Stable, draw-house, engine-house, boiler-house, tool-house.

Western-avenue Bridge to Watertown. — Tool-house.

List of Small Bridges or Culverts having Wooden Tops, which are Repaired by Bridge Division. — Walls Repaired and Openings Cleaned by Sewer Division.

LOCATION.	Span.	Height of Opening.	Length.	Side Walls.	Covering.
	Feet.	*Feet.*	*Feet.*		
Ashland street and Canterbury, near Calvary Cemetery, West Roxbury	7.6	5.5	75	Stone.	Wood.
Beech street, near Anawan avenue, at Central Station, West Roxbury	4.0	4.0	50	Stone.	Wood.
Cass street, near Spring-street Station, West Roxbury	7.0	3.0	21	Stone.	Wood.
Cohasset street, Roslindale	14.0	7.5	60	Stone.	Wood.
Gardner street, near Cow Island, West Roxbury	5.0	5.5	33	Wood.	Wood.
Jamaica street, Jamaica Plain	10.0	4.0	39	Stone.	Wood.
Park street, west of Dorchester avenue, Dorchester	5.0	3.7	50	Stone.	Wood.
Park street, west of New York, New Haven & Hartford Railroad, Dorchester	8.5	5.0	50	Stone.	Wood.
Spring street, near Spring-street Station, West Roxbury	2.7	2.7	63	Stone.	Wood.
Summer street, near Spring-street Station, West Roxbury	4.0	4.5	40	Stone.	Wood.
Williams street, at Stony brook, West Roxbury	5.0	5.0	50	Wood.	Wood.
Woodman street, Jamaica Plain	6.3	4.0	65	Stone.	Wood.

Table showing Width of Bridges, kind of Roadways, Sidewalks, etc., on Tide-water Bridges, 1903.

NAME OF BRIDGE.	Width of Bridge.	ROADWAY.		SIDEWALKS.		
		Width.	Kind of Roadway.	No.	Width.	Kind of Walks.
	Ft. In.	*Ft. In.*			*Ft. In.*	
Broadway	60 0	40 0	Plank	2	10 0	Coal-tar concrete.
Cambridge street	40 0	32 9	"	1	6 0	Plank.
Craigie's	64 0	48 0	Paved	2	8 0	Brick.
Charlestown	100 0	127 9 122 0 127 9	"	2	10 0	Asphalt.
Chelsea, North	49 0	40 0	"	1	8 0	Coal-tar concrete and plank.
" South	50 3	41 2	"	1	8 0	Plank.
" street	30 0	23 2	Plank	1	6 0	"
Commercial point	about 34 0	about 27 0	"			
Congress street	60 0	44 0	Paved	2	8 0	Coal-tar concrete.
Dover st. (over water)	60 0	40 0	"	2	10 0	Asphalt.
Essex street	31 0	22 8	Plank	1	7 6	Plank.
Federal street	69 0	49 0	Paved	2	10 0	Asphalt.
Granite	30 2	24 4	Plank	1	5 0	Plank.
Harvard	69 4	51 0	"	2	9 2	Asphalt.
L street	60 0	44 0	Paved	2	8 0	"
Malden	60 0 to 67 6	44 0	"	2	8 0	Composition.
Meridian street	50 0	36 0	"	2	7 0	Coal-tar concrete.
Mt. Washington ave.	61 0	39 6	"	2	10 9	" "
Neponset	30 0	23 10	Plank	1	5 5	Plank.
North Beacon street	31 0	25 2	"	1	5 0	"
North Harvard street,	28 2	26 7	"			
Prison Point	50 0	36 0	Plank part Paved part	2	7 0	Coal-tar concrete.
Summer street	100 0	76 0	" entire	2	12 0	Asphalt.
Warren	80 0	60 0	Paved	2	10 0	Coal-tar concrete.
Western avenue to Cambridge	33 2	26 3	Plank	1	6 0	Plank.
Western avenue to Watertown	33 0	24 2	"	1	8 0	"
Winthrop	24 2	19 10	"	1	3 7	"
West Boston (old bridge)	50 0	36 0	Paved	2	7 0	Brick.

Table showing the Widths of Openings for Vessels in all Bridges Provided with Draws in the City of Boston, 1903.

NAME OF BRIDGE.	Location.	Number of Openings.	Width.
Boston & Maine R.R., Eastern Division	Boston to Charlestown	1	39 feet 7 inches.
Boston & Maine R.R., Eastern Division	Over Miller's river	1	35 " 9 "
Boston & Maine R.R., Fitchburg Division	Boston to Charlestown	1	36 " 0 "
Boston & Maine R.R., Fitchburg Division (for teaming freight)	" "	1	36 " 0 "
Boston & Maine R.R. (freight), Southern Division	Boston to East Cambridge,	1	40 " 2 "
Boston & Maine R.R. (passenger), Southern Division	" "	1	39 " 7 "
Boston & Maine R.R., Western Division	Boston to Charlestown	1	39 " 7 "
Boston & Maine R.R., Western Division	Over Miller's river	1	35 " 10 "
Broadway	Over Fort Point channel	1	43 " 0 "
Cambridge street	Brighton to Cambridge	1	36 " 4 "
Craigie's	Boston to East Cambridge,	1	36 " 0 "
Charlestown (main channel)	Boston to Charlestown	2	50 " 0 "
Charlestown (north channel)	" "		50 " 0 "
Chelsea (south channel)	Charlestown to Chelsea	1	38 " 9 "
Chelsea (north channel)	" "	1	60 " 0 "
Chelsea street (East Boston side)	East Boston to Chelsea	2	36 " 0 "
Chelsea street (Chelsea side)	" "		36 " 0 "
Commercial Point (or Tenean)	Dorchester	1	24 " 2 "
Congress street (Boston side)	Over Fort Point channel	2	43 " 3 "
Congress st. (South Boston side),	" " "		50 " 0 "
Dover street	" " "	1	37 " 0 "
Essex street	Brighton to Cambridge	1	36 " 0 "
Federal street	Over Fort Point channel	1	41 " 6 "
Grand Junction R.R	Brighton to Cambridge	1	36 " 0 "
Grand Junction R.R	East Boston to Chelsea	1	49 " 2 "
Granite	Dorchester to Milton	1	36 " 0 "
Harvard (Boston side)	Boston to Cambridge	2	36 " 6 "
Harvard (Cambridge side)	" "		36 " 10 "
L street	Over Reserved channel, South Boston	1	39 " 9 "
Malden	Charlestown to Everett	1	50 " 0 "

Table showing Width of Openings, etc. — *Concluded.*

NAME OF BRIDGE.	Location.	Number of Openings.	Width.
Meridian st. (East Boston side)..	East Boston to Chelsea....	2	59 feet 2 inches.
Meridian street (Chelsea side)....	" "	.....	59 " 0 "
Mt. Washington avenue (Boston side).....	Over Fort Point channel...	2	42 " 2 "
Mt. Washington avenue (South Boston side)	" " "	.. ..	52 " 0 "
Neponset.....	Dorchester to Quincy.....	2	36 " 0 "
New York, New Haven & Hartford R.R.....	Over South Bay.....	1	28 " 4
New York, New Haven & Hartford R.R., Y-connection.....	Over Fort Point channel...	1	41 " 10 "
New York, New Haven & Hartford R.R.....	" " "	. ....	41 " 5 "
New York, New Haven & Hartford R.R.....	Dorchester to Quincy.....	1	35 " 10 "
North Beacon street.....	Brighton to Watertown....	1	30 " 0 "
North Harvard street.....	Brighton to Cambridge....	1	36 " 0 "
Prison Point.....	Charlestown to Cambridge,	1	36 " 0 "
Summer street.....	Over Fort Point channel...	1	50 " 0 "
Warren.....	Boston to Charlestown.....	1	36 " 0 "
West Boston (temporary).....	Boston to Cambridge.....	1	36 " 0 "
Western avenue	Brighton to Cambridge	1	36 " 0 "
Western avenue.....	Brighton to Watertown....	1	35 " 10 "

DRAWTENDERS' REPORT.*

Giving Number of Vessels passing through Drawbridges Controlled by the City of Boston, from February 1, 1903, to January 31, 1904, Inclusive.

BRIDGE.	STEAMERS.			SAILING VESSELS.			TUGS.			ALL OTHERS.			TOTAL NUMBER VESSELS.			Total Number of Cargoes.	Total Number of Openings.
	By Day.	By Night.	Total.	By Day.	By Night.	Total.	By Day.	By Night.	Total.	By Day.	By Night.	Total.	By Day.	By Night.	Total.		
Broadway	.....	.....	.....	1,063	140	1,203	3,927	432	4,359	1,934	301	2,235	6,924	873	7,797	1,713	3,873
Charlestown	2	.....	2	730	353	1,083	3,306	903	4,209	1,702	490	2,192	5,740	1,746	7,486	1,488	2,052
Chelsea (north)	426	35	461	731	57	788	7,663	1,082	8,745	3,471	547	4,018	12,291	1,721	14,012	2,505	8,078
Chelsea (south)	53	2	55	494	23	517	3,729	267	3,996	2,707	145	2,852	6,983	437	7,420	1,825	4,843
Chelsea street	6	.....	6	23	.....	23	110	2	112	57	2	59	196	4	200	28	143
Congress street	56	2	58	1,274	168	1,442	6,165	819	6,984	2,464	356	2,820	9,959	1,345	11,304	1,980	6,129
Dover street	.....	.....	.....	960	99	1,059	3,354	345	3,699	1,345	193	1,538	5,659	637	6,296	1,271	3,782
Federal street	.....	.....	.....	1,040	168	1,208	4,002	562	4,564	1,888	313	2,201	6,930	1,043	7,973	1,799	4,549
Granite	.....	.....	.....	31	1	32	222	4	226	90	.....	90	343	5	348	59	215
L street	.....	.....	.....	216	48	264	3,961	680	4,641	2,110	519	2,629	6,287	1,247	7,534	851	5,183
Malden	2	.....	2	173	5	178	1,705	130	1,835	899	85	984	2,779	220	2,999	511	1,681
Meridian street	24	4	28	334	33	367	6,183	1,379	7,562	2,653	574	3,227	9,194	1,990	11,184	1,322	6,866
Mt. Washington avenue	70	30	100	1,149	146	1,295	5,401	676	6,077	2,240	343	2,583	8,860	1,195	10,055	1,935	5,520
Neponset	.....	.....	.....	37	1	38	230	4	234	93	.....	93	360	5	365	63	232
Summer street	56	2	58	1,273	167	1,440	6,144	815	6,959	2,454	352	2,806	9,927	1,336	11,263	1,982	6,105
Warren	4	.....	4	732	327	1,059	2,594	618	3,212	1,381	344	1,725	4,711	1,289	6,000	1,280	3,751
Western avenue to Watertown	.....	.....	.....	.....	.....	.....	115	.....	115	71	.....	71	186	.....	186	36	121
Totals	699	75	774	10,260	1,736	11,996	58,811	8,718	67,529	27,559	4,564	32,123	97,329	15,093	112,422	20,648	63,123

* West Boston, Cambridge street, Essex street, North Harvard street, Western avenue to Cambridge, Prison Point, Craigie's and Harvard bridges are not included in this table, being in the care of Commissioners representing the two cities (Boston and Cambridge) connected by these bridges.

DRAWTENDERS' REPORTS.*

Giving Number of Vessels Passing through Drawbridges Controlled by the City of Boston, from February 1, 1899, to January 31, 1904, Inclusive.

NAME OF BRIDGE.	STEAMERS.					SAILING VESSELS.					TUGS.					ALL OTHERS.					TOTAL NUMBER OF VESSELS.					TOTALS
	1899.	1900.	1901.	1902.	1903.	1899.	1900.	1901.	1902.	1903.	1899.	1900.	1901.	1902.	1903.	1899.	1900.	1901.	1902.	1903.	1899.	1900.	1901.	1902.	1903.	Feb. 1, 1899, to Jan. 31, 1904.
Broadway	4	8	4	6	...	2,309	1,630	1,719	1,586	1,203	3,954	3,866	4,558	5,156	4,359	1,783	1,913	2,140	2,409	2,235	8,050	7,417	8,421	9,157	7,797	40,842
Charles River	55	...	...	...	...	1,768	.....	.....	.....	.....	3,769	.....	.....	.....	.....	2,101	.....	.....	.....	.....	7,693	.....	.....	.....	.....	7,693
Charlestown	...	93	6	...	2	.....	1,567	1,474	1,265	1,083	.....	4,546	4,571	3,907	4,209	.....	2,333	2,578	1,907	2,192	.....	8,539	8,629	7,079	7,486	31,733
Chelsea (North)	245	508	504	443	461	950	900	727	782	788	6,986	9,411	7,834	7,766	8,745	3,123	4,135	3,835	3,826	4,018	11,304	14,954	12,900	12,817	14,012	65,987
Chelsea (South)	8	40	6	30	55	1,050	1,047	668	726	517	3,322	3,369	3,155	3,789	3,996	1,275	1,521	1,652	2,086	2,852	5,655	5,977	5,481	6,631	7,420	31,164
Chelsea street	...	1	1	2	6	8	22	2	4	23	126	132	111	199	112	69	75	113	267	59	203	230	227	472	200	1,332
Congress street	113	91	112	73	58	2,765	1,916	1,979	1,866	1,442	8,185	7,263	8,129	7,868	6,984	3,034	3,089	3,275	3,353	2,820	14,097	12,359	13,495	13,160	11,304	64,415
Dover street	6	6	4	4	...	2,154	1,488	1,590	1,390	1,059	3,386	3,305	4,013	4,557	3,699	1,408	1,561	1,628	1,968	1,538	6,954	6,360	7,235	7,919	6,296	34,764
Federal street	16	10	10	6	...	2,378	1,659	1,765	1,559	1,208	4,177	4,033	4,887	5,338	4,564	1,747	1,875	2,049	2,302	2,201	8,318	7,577	8,721	9,205	7,973	41,794
Granite	...	...	...	...	...	59	28	36	33	32	262	235	259	166	226	65	92	102	66	90	386	355	397	265	348	1,751
L street	...	...	...	...	...	410	372	340	332	264	1,984	2,142	2,479	3,398	4,641	1,600	2,110	2,211	2,108	2,629	3,994	4,624	5,020	5,838	7,534	27,010
Malden	...	4	...	...	2	254	312	244	232	178	1,487	2,098	2,001	1,756	1,835	866	1,026	1,505	1,031	984	2,607	3,440	3,750	3,019	2,999	15,815
Meridian street	83	68	105	67	28	497	487	406	331	367	5,668	6,449	5,875	6,873	7,562	3,251	3,161	2,806	3,134	3,227	9,499	10,165	9,192	10,405	11,184	50,445
Mt. Wash. avenue	83	59	85	70	100	2,486	1,717	1,811	1,709	1,295	6,706	6,155	6,897	7,050	6,077	2,625	2,845	2,822	2,936	2,583	11,900	10,776	11,615	11,765	10,055	56,111
Neponset	...	...	...	...	...	68	26	50	49	38	272	214	270	164	234	86	128	110	53	93	426	368	430	266	365	1,855
No. Beacon street	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	21	.....	.....	.....	.....	21	.....	.....	21
Summer street	...	91	112	73	58	.....	1,855	1,982	1,979	1,440	.....	7,160	8,128	7,851	6,959	.....	3,018	3,200	3,232	2,806	.....	12,124	13,422	13,135	11,263	49,944
Warren	32	12	7	7	4	1,834	1,554	1,449	1,212	1,059	3,979	4,084	4,020	3,222	3,212	2,222	2,324	2,463	1,624	1,725	8,067	7,974	7,939	6,065	6,000	36,045
Western avenue to Watertown	...	...	...	...	...	.....	4	.....	.....	.....	1,305	222	136	62	115	1,523	54	100	34	71	2,828	280	236	96	186	3,626
Totals	645	991	956	781	774	18,990	16,584	16,242	15,055	11,996	55,568	64,684	67,323	69,122	67,529	26,778	31,260	32,610	32,336	32,123	101,981	113,519	117,131	117,294	112,422	562,347

* West Boston, Cambridge street, Essex street, North Harvard street, Western avenue to Cambridge, Prison Point, Craigie's and Harvard bridges are not included in this table, being in care of Commissioners representing the two cities (Boston and Cambridge) connected by these bridges.

APPENDIX B.

REPORT OF THE DEPUTY SUPERINTENDENT OF THE FERRY DIVISION.

NORTH FERRY, EAST BOSTON, February 1, 1904.

MR. JAMES DONOVAN,

Superintendent of Streets:

DEAR SIR, — I herewith submit the annual report of the Ferry Division for the year ending January 31, 1904.

During the season just passed, and even during the winter, when unusual care was required, and extra expense was entailed, the running time of the ferry-boats was maintained without material variation. In spite of fog, freezing weather, and storms, the service of the division has been conducted with an unusual freedom from accidents or delays.

I respectfully call your attention to the following requirements, which are necessary to maintain the proper efficiency of this division:

(1) The urgent need of a new coal-pocket at the North ferry, East Boston side, as the present one is entirely inadequate, and is in a condition which is dangerous to the surrounding buildings, as the coal stored there is liable at any time to be set on fire by spontaneous combustion.

(2) The need of replacing the side wheel ferry-boat "Revere," which was built in 1875, and has been so long in use that constant overhauling and repairs are necessary in order to keep her in running condition.

The property in charge of this division is as follows:

South Ferry, East Boston Side. — Located at the termination of Lewis street, and covers an area of 58,725 square feet of land and water. On these premises are one headhouse, with canopies; one workshop for carpenters, machinists, and blacksmith, both of the above buildings being at present time in course of construction; one storehouse and temporary waiting-room, one new modern coal-pocket, three new piers, which form the two slips; two drops and tanks, one new wharf and dock, where boats are laid when not in use, or while undergoing repairs.

South Ferry, Boston Side. — Located at the termination of Eastern avenue, and covers an area of 38,135 square feet of land and water, on which are one head-house, with canopies; one gate-room, three piers which form the two slips, and two drops and tanks.

North Ferry, Boston Side. — Located at the termination of Battery street, and covers an area of 45,000 square feet of land and water, on which are one head-house, with canopies; one gate-room, three piers, which form the two slips and two drops and tanks.

North Ferry, East Boston Side. — Located at the termination of Border street, and covers an area of 62,138 square feet of land and water, on which are one head-house, with canopies; one boiler and oil room, one stable, one coal-shed, three piers, which form the two slips, and two drops and tanks.

The following steam ferry-boats are in commission:

Name.	When built.	Kind.	Length.
Revere	1875	Side-wheel,	148 ft.
D. D. Kelly	1879	"	148 "
Hugh O'Brien	1883	"	163 "
General Hancock	1887	"	148 "
Noddle Island	1889	Propeller.	164 " 3 in.
Gov. Russell	1900	"	164 " 3 in.
General Sumner	1900	"	164 " 3 in.

Respectfully submitted,

WM. J. DONOVAN,

Deputy Superintendent.

STREET DEPARTMENT, FERRY DIVISION.

CONSOLIDATED FINANCIAL STATEMENT FOR THE YEAR 1903–4.

1. Receipts.

* Total cash receipts during the year		$177,508 31
Cash in hands of tollmen at beginning of year		575 00
Total		$178,083 31
Cash paid over to City Collector,	$177,482 21	
Rejected money received and destroyed	1 10	
		177,483 31
Balance of cash on hand at end of the year		$600 00

2. Appropriations and Expenditures.

Balance unexpended from previous year (loans)	$41,349 01
Received from City Treasurer by transfer	34,535 23
Received from City Treasurer, annual appropriation for this division for 1903	220,000 00
† Total appropriations of all kinds	$295,884 24
† Total expenditures of all kinds	295,868 64
Balance unexpended (loans)	$15 60

3. Result of Operations for the Year.

Receipts for the year (net income)		$177,507 21
Ordinary expenses	$254,535 23	
Extraordinary expenses (special appropriations)	41,333 41	
Interest on ferry debts	16,920 00	
Depreciation of boats	16,088 15	
	$328,876 79	
Increase in stock of supplies, machinery, tools, engines, boilers and heating apparatus	9,934 35	
Net outgo for the year		318,942 44
Net loss for year		$141,435 23

* Twenty-five dollars of above receipts were retained to be added to cash in hands of tollmen as working capital.

† Details of appropriations and expenditures given in Table 5.

4. Balance Sheet.

End of Fiscal Year, January 31, 1904.

ASSETS.		LIABILITIES.		
AVAILABLE ASSETS:		CURRENT LIABILITIES:		
Cash on hand	$600 00	None.		
Inventory of supplies, etc., on hand	9,793 00			
TOTAL AVAILABLE ASSETS	$10,393 00			
CONTINGENT ASSETS:		CONTINGENT LIABILITIES:		
City treasury, balance of appropriations	15 60	Appropriations account		$15 60
FIXED ASSETS:		FIXED LIABILITIES:		
Real estate and buildings *	† 577,400 00	Capital of the city invested in the ferries		3,473,086 29
Ferry-boats ‡	252,047 65	Viz.: Total expenditures all kinds for 46 years, including interest on debts	$9,333,600 28	
Engines, boilers, machinery, tools, and heating apparatus	7,595 00	Less total receipts	5,860,513 99	
TOTAL TANGIBLE ASSETS	$847,451 25			
Avenues, etc., East Boston §	315,815 68			
Deficiency or loss by operation and maintenance of the ferries, 46 years to date	2,309,834 96			
	$3,473,101 89			$3,473,101 89

* Original purchase of ferries $276,375 00
New buildings, drops, slips, etc., cost to date 485,092 10
Land, Lincoln's Wharf, cost, 1887 ..... 5,562 52
Land, Battery Wharf, cost, 1893 ..... 10,000 00
$777,029 62

† Assessors' figures for 1901.

‡ Total cost to date, per ferry books $618,070 58
Less boats sold, depreciated or destroyed 366,022 93
$252,047 65

§ Cost (net) previous to 1870, per ferry books, viz.:
"Expenditures for avenues" $250,000 00
"Expenditures for improvements" 65,815 68
$315,815 68

These expenditures were practically subsidies to the East Boston Ferry Company by the city before the ferries were purchased by the latter, and should properly be added to the deficiency or loss.

5. Comparison of Receipts, Appropriations, and Expenditures for Five Years.

RECEIPTS.	1899-1900.	1900-01.	1901-02.	1902-03.	1903-04.
From foot passengers (tollmen)	$119,925 21	$118,172 57	$120,115 63	$125,457 18	$130,626 23
" " passes (office sales)	1,541 30	1,497 80	1,571 00	1,470 70	994 70
" extra passengers on team (gatemen)	3,083 92	2,725 46	2,338 99	2,165 31	1,734 32
" team tickets (office sales)	577 50	320 00	334 00	547 50	1,113 00
" strip team tickets (tollmen)	27,517 00	25,521 00	27,137 50	27,168 50	27,353 50
" teams (gatemen)	13,902 38	14,263 96	13,291 47	13,308 09	12,857 56
" city collector for tickets	.....	.....	.....	.....	1,367 50
" free ferries, July 4, 1903	.....	.....	.....	.....	1 00
Total from rates	$166,547 31	$162,500 79	$164,788 59	$170,117 28	$176,047 81
From rents (Sargent's Wharf and pedler's privileges)	2,523 32	2,578 34	2,540 00	2,477 50	656 50
" old materials sold	174 50	176 75	179 77	46 45	72 00
" other sources	395 00	375 50	372 50	551 50	732 00
Total ordinary receipts	$169,640 13	$165,631 38	$167,880 86	$173,192 73	$177,508 31
From sales of boats	2,385 00	1,199 50	.....	.....	.....
Total receipts	$172,025 13	$166,830 88	$167,880 86	$173,192 73	$177,508 31
Less rejected money (counterfeit, etc.)	10 09	10 55	1 24	2 85	1 10
Total receipts turned over to city	$172,015 04	$166,820 33	$167,879,62	$173,189 88	*$177,507 21
APPROPRIATIONS.					
Regular appropriations	$212,500 00	$237,000 00	$250,600 00	$220,000 00	$220,000 00
Special appropriations:					
New ferry landing, etc.	†131,200 00	.....	.....	.....	.....
New clock, South Ferry	500 00	.....	.....	.....	.....
Ferry improvements	.....	.....	.....	100,000 00	.....
Total appropriations	$344,200 00	$237,000 00	$250,600 00	$320,000 00	$220,000 00

EXPENDITURES (ORDINARY).					
Office:					
Superintendent's salary	$2,925 00	$3,000 00	$3,000 00	$3,000 00	$3,000 00
Clerks and cashier	4,388 28	4,154 69	4,200 00	4,100 30	4,189 00
Stationery	434 82	356 55	287 70	348 59	397 05
Printing	591 59	1,292 39	804 80	1,342 84	918 58
Telephones	290 51	295 59	336 61	265 88	217 30
‡ Keeping horse and repairing vehicle	607 06	218 68	315 47	947 90	675 93
Advertising, etc.	22 00	60 96	.....	102 07	129 22
Examination of accounts, etc.	.....	.....	.....	469 00	.....
Entertaining guests	319 85	.....	.....	.....	.....
Travelling expenses	280 00	43 00	63 00	70 00	.....
Premiums, surety companies	156 50	156 00	114 50	115 00	107 50
Other expenses	.....	.....	.....	.....	.....
Total office expenditures	$10,015 61	$9,577 86	$9,122 08	$10,761 58	$9,634 58
Ferry-boats and landings:					
Employees	138,934 50	145,298 65	151,200 46	130,562 51	149,850 77
Fuel	24,499 69	41,499 46	40,249 21	47,301 50	61,042 76
Teaming, wheeling coal, etc.	3,796 40	4,098 40	4,237 50	5,143 00	5,552 60
Oil, waste, and supplies	3,605 86	5,257 58	5,761 51	6,112 60	5,744 50
Tools, iron, and hardware	1,551 43	1,423 99	1,613 28	2,702 22	.....
Gas	1,361 90	1,280 29	957 56	716 05	1,047 58
Electric light	5,417 83	6,156 49	7,160 98	6,749 35	7,611 62
Towing by horses	.....	.....	.....	519 36	.....
" " electric power	600 00	605 00	600 00	600 00	600 00
Repairs of boats	10,862 66	8,445 60	16,331 98	6,164 08	6,949 43
" " buildings and drops	5,377 93	7,286 88	6,108 99	4,850 62	5,127 00
Furnishings, electric, etc.	898 94	852 67	636 76	639 97	670 88
Damages	.....	52 00	20 00	23 45	149 88
Rent Sargent's wharf	4,000 00	4,000 00	4,000 00	4,000 00	.....
Other expenditures	900 12	1,165 04	753 75	842 00	553 63
Total from regular appropriations	$211,822 87	$236,999 91	$248,754 06	$227,688 29	$254,535 23

* Less $25 retained for addition to tollmen's working capital.

† Portion of $500,000 loan authorized, of which $200,000 was transferred to Sewer Division.

‡ Includes repair coal carts.

5. — Comparison of Receipts, etc. — *Concluded.*

RECEIPTS.	1899-1900.	1900-01.	1901-02.	1902-03.	1903-04.
Amount brought forward	$211,822 77	$236,991 99	$248,754 06	$227,688 29	$254,535 23
EXPENDITURES FROM SPECIAL APPROPRIATIONS.					
New ferry landing	12,187 69	96,191 74	41,988 16	10,639 71	.....
New ferry-boats	64,853 80	8,781 81	.....	.....	.....
New clock, South Ferry	474 79	.....	.....	.....	.....
Ferry improvements	.....	.....	.....	58,650 99	41,333 41
Total expenditures, regular and special	$289,339 15	$341,973 46	$290,742 22	$296,978 99	$295,868 64
Transfers { to treasury	25 21	09	.....	.....	.....
Transfers { to other departments	200,677 13	.....	4,959 87	.....	.....
Total expenditures, including transfers	$490,041 49	$341,973 55	$295,702 09	$296,978 99	$295,868 64
Balances in treasury unexpended:					
From ordinary appropriations	.....	.....	.....	.....	.....
From special appropriations	$157,601 42	$52,627 87	$10,639 71	$41,349 01	$15 60

6. Comparative Balance Sheets at the Close of each Year for Five Years.

	January 31, 1900.	January 31, 1901.	January 31, 1902.	January 31, 1903.	January 31, 1904.
Assets.					
Cash in hands of tollmen,	$575 00	$575 00	$575 00	$575 00	$600 00
Accounts receivable....	16 68	.....	.....	62 50	.....
Fuel and supplies on hand.....	12,429 92	10,870 05	10,371 78	7,153 65	9,793 00
City Treasurer (balance of appropriations).....	157,601 42	52,627 87	10,639 71	41,349 01	15 60
Real estate and buildings (Assessors' valuations)	457,500 00	498,900 00	546,600 00	577,400 00	577,400 00
Ferry-boats (less depreciation)	216,756 31	303,458 37	285,250 85	268,135 80	252,047 65
Machinery and tools.....	6,000 00	6,000 00	6,000 00	300 00	7,595 00
Total tangible assets...	$850,879 33	$872,431 29	$859,437 34	$894,975 96	$847,451 25
Cost of avenues, etc., East Boston (previous to 1870)†.....	315,815 68	315,815 68	315,815 68	315,815 68	315,815 68
Deficiency of assets (loss)	1,863,118 43	1,927,086 05	2,034,374 44	2,168,337 23	2,309,834 96
Totals.....	$3,029,813 44	$3,115,333 02	$3,209,627 46	$3,379,128 87	$3,473,101 89
Liabilities.					
Capital invested by City of Boston to date	$2,872,212 02	$3,062,705 15	$3,198,987 75	$3,337,779 86	$3,473,086 29
Appropriations account (credit balances).....	157,601 42	52,627 87	10,639 71	41,349 01	15 60
Total liabilities.....	$3,029,813 44	$3,115,333 02	$3,209,627 46	$3,379,128 87	$3,473,101 89

Details of Capital Invested by the City of Boston.

Total expenditures to date, per ferry books..	$7,694,882 56	$8,049,900 02	$8,355,982 24	$8,666,381 23	$8,977,252 87
Interest on debts for the year (per City Auditor).....	13,044 00	15,340 00	13,420 00	15,003 00	16,920 00
Interest previous years, etc. (net debits per Auditor).....	279,148 85	279,148 85	279,148 85	279,148 85	279,148 85
Total expenditures....	$7,987,075 41	$8,344,388 87	*$8,648,551 09	*$8,960,533 08	*$9,273,321 72
Deduct total receipts paid to Collector.....	5,114,863 39	5,281,683 72	*5,449,563 34	*5,622,753 22	*5,800,235 43
Excess of expenditure, viz., capital invested by city.....	$2,872,212 02	$3,062,705 15	$3,198,987 75	$3,337,779 86	$3,473,086 29

*Auditor's figures for total expenditures and receipts are $60,278.56 more than above, the difference (capital invested) being the same.

$3,542.50 for additional interest, and $33, discrepancy in total stated by ferry books, have also been included in these figures.

† See foot note § under Table 4.

7. Total Expenditures Upon Ferries Since 1858–59.

Expenditures for avenues, paving, interest, etc., previous to purchase of the ferries by the city †	$444,101 30
Purchase of ferries, April, 1870	276,375 00
* Expenditures for ferry-boats since April, 1870,	618,070 58
* Expenditures for new buildings, piers, drops, etc.	530,523 64
* Expenditures for tools and fixtures	14,752 46
Expenditures for land from Lincoln's wharf in 1887	5,562 52
Expenditures for land from Battery wharf in 1893	10,000 00
Total expenditures on capital account	$1,899,385 50
* Expenditures for repairs of all kinds	764,003 80
* Expenditures for fuel	1,205,705 02
* Expenditures for salaries and wages	4,027,275 14
Expenditures for all other purposes	1,437,230 82
	$9,333,600 28

TOTAL RECEIPTS FROM FERRIES SINCE 1858–59.

Receipts from rents, etc., previous to purchase of ferries		$29,588 56
* Receipts from ferry-tolls since purchase of ferries		5,582,093 21
* Receipts from rents since purchase of ferries		58,426 96
* Receipts from sales of ferry-boats		147,331 21
* Receipts from all other sources, per ferry books		13,118 98
Receipts from all other sources, additional, per Auditor		30,690 00
		$5,861,248 92
Less rejected money destroyed	$101 93	
Less amount counted twice	33 00	
Less amount in hands of tollmen	600 00	
		734 93
Total, per City Auditor's figures		$5,860,513 99

* According to books of the Ferry Division.
† See footnote § under Table 4.

REGULAR ANNUAL (ORDINARY) AND SPECIAL APPROPRIATIONS (EXTRAORDINARY) OF THE FERRY DIVISION OF THE STREET DEPARTMENT FOR THE YEAR ENDING JANUARY 31, 1904.

Appropriation for year ending January 31, 1904	$220,000 00
Received by transfer	34,535 23
Total amount	$254,535 23
Amount of expenditures	$254,535 23

SPECIAL APPROPRIATIONS.

Appropriation authorized and issued May 27, 1902, for ferry improvements		$100,000 00
Amount expended from May 27, 1902, to February 1, 1903	$58,650 99	
Amount expended from February 1, 1903, to February 1, 1904	41,333 41	
		99,984 40
Unexpended balance of appropriation January 31, 1904		$15 60

DETAILS OF EXPENDITURES FROM SPECIAL APPROPRIATION FOR YEAR ENDING JANUARY 31, 1904.

Ferry Improvements Appropriation.

Amount of expenditure from February 1, 1903, to February 1, 1904		$41,333 41
Paid on new head-house, South Ferry, East Boston, to John J. Flynn, Contractor	$4,000 00	
Paid for reconstructing piers to Lawler Bros., Contractors	5,591 79	
Paid for reconstructing piers to W. H. Ellis, Contractor	2,296 86	
Paid for machinery, motors, engines, boilers, heating apparatus, refitting and painting buildings,	16,179 41	
Paid for labor	13,265 35	
		$41,333 41

STATEMENT SHOWING RECEIPTS AT EACH FERRY.

North Ferry.

From Tollman.	Foot Passengers.	Team Tickets.	Total.
No. 2	$15,238 34	$2,427 50	$17,665 84
" 3	15,039 70	2,644 50	17,684 20
" 5	15,021 61	2,284 00	17,305 61
" 6	14,638 97	2,422 50	17,061 47
" 9	14,993 92	2,177 50	17,171 42
" 10	10,829 55	1,610 00	12,439 55
" 13	15,410 93	2,151 50	17,562 43
	$101,173 02	$15,717 50	$116,890 52

From tollmen		$116,890 52
From gatemen:		
For 98,663 foot passengers, at 1c.,	$986 63	
For cash fares for teams	7,606 56	
		8,593 19
Total at North Ferry		$125,483 71

South Ferry.

From Tollman.	Foot Passengers.	Team Tickets.	Total.
No. 1	$6,915 20	$2,775 00	$9,690 20
" 4	6,692 92	2,736 00	9,428 92
" 7	6,963 22	2,818 50	9,781 72
" 8	6,550 27	3,155 50	9,705 77
" 11	1,154 25	83 50	1,237 75
" 12	1,177 35	67 50	1,244 85
	$29,453 21	$11,636 00	$41,089 21

From tollmen		$41,089 21
From gatemen:		
For 74,769 foot passengers, at 1c.,	$747 69	
For cash fares for teams	5,251 00	
		5,998 69
Total at South Ferry		$47,087 90
North and South Ferries, as above		$172,571 61
Tickets paid for at office of City Collector		1,367 50
Tickets paid for at office of Ferry Division		2,107 70
Received in lieu of free ferries, July 4, 1903		1 00
Total ferriage receipts		$176,047 81

Brought forward	$177,074 81
Rents for the year	656 50
Sales of old material, head-house and bootblack privileges	804 00
Total cash receipts, as above . . .	$177,508 31

STATEMENT SHOWING THE DIFFERENCE OF TRAVEL ON THE FERRIES FROM FEBRUARY 1, 1903, TO FEBRUARY 1, 1904.

	North Ferry.	South Ferry.
Foot passengers at 1 cent each . .	10,117,302	2,945,321
Foot passengers by ticket . .	107,326	43,600
Foot passengers free . . .	75,302	2,826
Total foot passengers . .	10,299,930	2,991,757
One-horse teams and pleasure carriages	384,007	237,322
Two-horse teams	129,729	122,319
Three-horse teams	3,644	4,600
Four-horse teams	7,311	5,684
Two-horse pleasure carriages and hacks	14,363	5,231
Handcarts, etc.	4,866	1,981
Drag-wheels	5	6
Free teams	5,417	567

TOTAL TRAVEL ON BOTH FERRIES FROM FEBRUARY 1, 1899, TO FEBRUARY 1, 1904.

	From Feb. 1, 1899, to Feb. 1, 1900.	From Feb. 1, 1900, to Feb. 1, 1901.	From Feb. 1, 1901, to Feb. 1, 1902.	From Feb. 1, 1902, to Feb. 1, 1903.	From Feb. 1, 1903, to Feb. 1, 1904.
One-horse teams	689,754	679,746	645,283	641,796	621,329
Two-horse teams	230,100	210,390	232,557	249,714	252,048
Three-horse teams	10,355	8,376	9,215	7,486	8,244
Four-horse teams	15,360	12,344	13,804	13,180	12,995
Two-horse carriages and hacks,	14,764	15,390	16,365	19,115	19,594
Two-cent tolls for handcarts, etc.	6,076	5,547	13,582	6,720	6,847
Drag-wheels, etc.	66	60	122	86	11
Foot passengers	12,453,163	12,243,877	12,395,649	12,923,734	13,213,559

TICKET STATEMENT FOR THE YEAR 1903–04.

	Balance outstanding Jan. 31, 1903.	Sold during the Year.	Delivered on Requisitions.	Total.	Received and Destroyed.	Balance outstanding Jan. 31, 1904.
Foot passes.....	212,013	99,470	45,200	356,683	150,936	205,747
One-horse team-tickets....	69,392	354,800	3,408	427,600	349,101	78,499
Two-horse team-tickets....	31,959	229,520	9,792	271,271	223,359	47,912
Three-horse team-tickets..	4,607	7,434	324	12,365	7,239	5,126
Four-horse team-tickets...	6,058	12,520	.....	18,578	12,079	6,499
One-horse carriage-tickets	20,273	27,660	480	48,413	27,181	21,232
Two-horse carriage-tickets	2,125	9,420	.....	11,545	9,237	2,308

APPENDIX C.

REPORT OF THE DEPUTY SUPERINTENDENT OF THE PAVING DIVISION.

ROOM 44, CITY HALL, BOSTON, February 1, 1904.

HON. JAMES DONOVAN,

Superintendent of Streets:

DEAR SIR, — I respectfully submit the annual report of the expenditures and income of the Paving Division of the Street Department for the financial year ending January 31, 1904, showing the nature of the work, the number and variety of permits issued, and the details of expenditures involved in paving, macadamizing, regulating, and constructing various streets.

The Paving Division has charge of the following work:

The maintenance and rebuilding of street surfaces and sidewalks.

The placing of signs.

The numbering of buildings.

The issuing of permits to open or occupy the streets or for such other purposes as may be required under the ordinances, and assists in the removal of snow and ice from the streets.

The cleaning of streets in the outlying sections of the city not covered by the Street Cleaning Division.

The division is in charge of a deputy superintendent, with a clerical force under the direction of a chief clerk, and an engineering force under the direction of a chief engineer.

Owing to the small amount of money appropriated by the city government for the rebuilding of streets the work accomplished has been somewhat limited; the renewal of street surfaces by the construction of a permanent stone pavement laid on a concrete base with pitch and pebble joints has been confined to the down-town streets, these being subjected to very heavy traffic, such as Beverly, Broad, Minot, Nashua and Purchase streets.

In the Charlestown district, Bow and Devens streets, and Rutherford avenue, as far as Chapman street, were relocated, widened and paved with large granite blocks on a six (6) inch Portland cement concrete base, with pitch and pebble joints.

The repairs upon asphalt pavement have been supervised, located and plotted upon plans prepared for that purpose, and tables are annexed showing the amount of repairs and the cost in detail on all asphalt pavement upon which the maintenance guarantee has expired.

An innovation during the year was the agreement entered into by the City of Boston and the asphalt companies whereby the asphalt repairs on streets on which the maintenance guarantee has expired are guaranteed for a period of three (3) years.

The asphalt repairs are becoming more extensive from year to year, consequently it would be more economical to resurface the entire street in many cases than to continue patching, if sufficient funds were provided.

Under the provisions of chapter "323" of the Acts of 1891, and acts in amendment thereof or in addition thereto, there were thirty-nine (39) streets and eight (8) public alleys built, and five (5) streets and two (2) boulevards partly completed during the year.

Columbia road construction, from the bridge over the N.Y., N.H. & H. R.R. to South Boston Point, is progressing rapidly; the section between Q and Covington streets is near completion, and the section between Covington street and the bridge will be completed during the summer of 1904.

Bennington street, from Moore to Saratoga streets, is completed, and from Saratoga street to the Revere town line is under construction. The portion between Moore and Prescott streets is in abeyance, awaiting the report of the Commission for the Abolishment of Grade Crossings.

Some work in the nature of rough grading has been done in Dorchester street, South Boston, and Hyde Park avenue and Belgrade avenue, West Roxbury.

During the year a number of streets in the residential sections of the city have been surfaced with bitulithic pavement. This pavement was introduced last year and is a very satisfactory street surfacing, particularly on grades where on account of the peculiarity of its composition horses are enabled to draw loads upon it with safety.

In the city proper, the streets laid with this pavement were:

Belvidere street.
Berkeley street, Beacon street to Boylston street.
Dartmouth street, Beacon street to Newbury street.

Gainsborough street, Huntington avenue to N.Y., N.H. & H. R.R.

West Newton street, Columbus avenue to Huntington avenue, and from Huntington avenue to Belvidere street.

Massachusetts avenue, Columbus avenue to Huntington avenue.

Oneida street, Harrison avenue to Albany street.

East Boston.

Maverick street, London street to Havre street.

South Boston.

Bowen street, E street to F street.

E street, south side of W. Fourth street to Broadway.

Silver street, A street to B street.

Silver street, E street to 221 feet westerly.

West Fourth street, E street to 221 feet westerly.

Stone Crushing Plants.

Operations in and about the stone crushing plants during the year have been quite active. The Iffley road crusher, erected in the early part of 1900, was taken down and removed to the Codman-street ledge, Dorchester, and re-erected. Two crushers were installed, the 13×30 being the initial crusher and the 9×15 taking care of the tailings. The elevator carrying the broken stone from the crusher to the screen consists of 9-inch×15-inch×20-inch buckets, bolted to a double chain, which is carried on sprocket wheels. The screen is the largest now in use by the city; it is twenty-four (24) feet over all and four (4) feet in diameter, with a screen surface of one hundred twenty-five (125) feet divided as follows: Four (4) feet of three (3) inch holes, four (4) feet of two and one-half ($2\frac{1}{2}$) inch holes, four (4) feet of one and one-half ($1\frac{1}{2}$) inch holes, and eight feet of seven-eighths ($\frac{7}{8}$) inch holes, this last section being covered with a dust jacket five (5) feet long, perforated with one-quarter ($\frac{1}{4}$) inch holes. The screen revolves on four friction rolls, the whole being carried on two longitudinal I-beams, resting on hard pine trusses, which are framed into the top plates of the stone bins. The elevator chains, sprocket wheels, screen, and all the wearing parts are made of manganese steel. An eighty (80) horse-power automatic cut-off Atlas engine furnishes the power for the plant; the crushing capacity is three hundred (300) tons per day, and the bins will store one thousand (1,000) tons crushed stone.

In March of the present year the old crushing plant at Rosseter-street ledge was burned down, necessitating the

erection of a new plant; plans were made and a structure similar but not as large as that at Codman street was built about midway between Rosseter street and Geneva avenue. The elevator consists of a single chain and sprocket with 7-inch×12-inch×15-inch buckets. The screen is twenty (20) feet over all and thirty-eight (38) inches in diameter, divided into three (3) feet of three (3) inch holes, four (4) feet of two and one-half ($2\frac{1}{2}$) inch holes, three (3) feet of one and one-half ($1\frac{1}{2}$) inch holes, and six (6) feet of seven-eighths ($\frac{7}{8}$) inch holes, this last section covered with a dust jacket four (4) feet long, perforated with one-quarter ($\frac{1}{4}$) inch holes. A thirty (30) horse-power throttling Atlas engine furnishes the power. The crushing capacity is two hundred (200) tons per day, and the bins store seven hundred (700) tons. There are two crushers, one a 9×15 Farrell, used as the initial crusher, and the other a 9×15 Champion, for the tailings.

A new plant with a 10×16 crusher, but similar in other respects to the Rosseter-street plant, is now under construction at the Bleiler ledge, Roxbury.

A new elevator and screen have been purchased for the Columbia-road crushing plant, which will be installed this winter.

The crushing plants at Centre street, West Roxbury, Kenney street, Roxbury, and Chestnut Hill avenue, Brighton, are in fair condition, but will need some repairs before starting up for another season.

The steam road-rollers, eight in number, consisting of four (4) Buffalo, Pitts, three (3) Aveling and Porter, and one (1) Harrisburg, are in good condition; the Buffalo, Pitts rollers are new and need no repairs; the Aveling and Porter rollers and the Harrisburg roller are undergoing repairs, and will be in good shape in the spring.

The department force has been employed during the year in repairing and resurfacing of streets, about forty (40) miles, or 500,000 square yards, of streets having been resurfaced with macadam.

A vast amount of work remains to be done not only on the macadam streets, but also on the paved streets, in order that they be put in proper condition. The amount of paving and regulating done by the department irrespective of the pitch and pebble work is as follows:

Edgestones set and reset	60,555	linear feet
Block paving on gravel	70,289	square yards
Brick sidewalks laid	29,078	" "
Artificial stone sidewalks laid	12,806	" "
Coal tar concrete walks	248	" "

Paving.

Edgestones set	21,394	linear	feet
Concrete base laid	28,962	square	yards
Granite block pavement on a concrete base laid with pitch and pebble joints	29,607	"	"
Granite flagging on a concrete base, laid with pitch and pebble joints	2,262	"	"
Granite block pavement on a concrete base, laid with grout joints	400	"	"
Granite block pavement laid on a gravel base with gravel joints	9,945	"	"
Granite flagging laid on a gravel base with gravel joints	682	"	"
Bitulithic pavement laid	30,272	"	"
Trinidad asphalt laid	1,711	"	"
Sicilian rock asphalt laid	1,036	"	"
Brick sidewalks laid	18,483	"	"
Crushed stone sidewalks laid	612	"	"
Artificial stone walks laid	11,085	square	feet

Beverly street, between Washington street, north, and Causeway street was paved with large granite blocks, with pitch and pebble joints, on a 6-inch Portland cement concrete base, the Boston Elevated Railway Company removing the old abandoned tracks previous to the contractor commencing work on the street. The portion between Causeway street and Warren bridge was not completed, as the contractor was obliged to suspend on account of the weather. The old pavement was excavated and distributed, some at Charlestown and some at lot on Massachusetts avenue. Former pavement, granite blocks with gravel joints on gravel base.

Broad street, between Central street and Atlantic avenue, was paved with large granite blocks, with pitch and pebble joints, on a 6-inch Portland cement concrete base. The paving and regulating was done under contract by W. H. Ellis, who did the necessary excavating, the price for which included the distribution of the old blocks, some being delivered in Charlestown and some in East Boston. The former pavement was granite blocks with gravel joints on gravel base.

Court street, from Sudbury street, across Bowdoin square, was paved with large granite blocks, on a 6-inch American cement concrete base, including the area within the tracks, which was paid for by the Boston Elevated Railway Company. The paving and regulating was done under contract by William J. Rafferty, who did the necessary excavating, the price for which included the hauling of the old blocks and surplus material to the lot on Massachusetts avenue. The former pavement was granite blocks with gravel joints on gravel base.

Dover street, between Washington street and Harrison avenue, was paved with large granite blocks, with pitch and pebble joints, on a 6-inch Portland cement concrete base, including the area within the tracks, which was paid for by the Boston Elevated Railway Company. The paving and regulating was done under contract by Benjamin M. Cram. The old pavement was removed and the roadway excavated by the city. Former pavement, granite blocks with gravel joints on gravel base.

Minot street, between Leverett and Lowell streets, was paved with large granite blocks, with pitch and pebble joints, on a 6-inch Portland cement concrete base. The paving and regulating was done under contract by D. J. Kiley. The old pavement was excavated and hauled away by the city. Former pavement, granite blocks with gravel joints on gravel base.

Nashua street, between Causeway and Minot streets, was paved with large granite blocks, with pitch and pebble joints, on a 6-inch Portland cement concrete base. The paving and regulating was done under contract by P. Brennan & Co., who did the necessary excavating, the price for which included the delivery of the old blocks at the lot on Massachusetts avenue. Former pavement, granite blocks with gravel joints on gravel base.

Purchase street, between Federal and Broad streets, was paved with large granite blocks, with pitch and pebble joints, on a 6-inch Portland cement concrete base. The paving and regulating was done under contract by John E. Burns & Co., who excavated the roadway, the price for which included the delivery of the old blocks at Roxbury and South Boston. Former pavement, granite blocks with gravel joints on gravel base.

Carson street, between Crescent avenue and Shoreham street, was laid out January 5, 1887. The contract for constructing the surface of this street was awarded to Benjamin M. Cram, December 1, 1902; work was begun April 16, 1903, and completed June 27, 1903. It is a six (6) inch macadam roadway, with brick sidewalks. The edgestones, flagging and crushed stone were furnished by the city and hauled by the contractor; the paving blocks and bricks were furnished on the line of the work by the city.

P street, between East Sixth street and Columbia road, was laid out November 17, 1868. The contract for constructing the surface of this street was awarded to H. P. Nawn, April 17, 1903; work was begun April 22, 1903, and completed July 29, 1903. It is a six (6) inch macadam roadway, with brick sidewalks. The edgestones, flagging and crushed stone were furnished by the city and hauled by the contractor; the paving blocks and bricks were furnished on the line of the work by the city.

Newbury street, between Hereford street and Massachusetts avenue, was paved with wooden blocks, on a six (6) inch Portland cement concrete base. The paving and regulating was done under contract by Patrick McGovern, who did the necessary excavating. Former pavement was macadam.

ASPHALT.

Dartmouth street, between Boylston and Newbury streets, in the area formerly occupied by the old horse car tracks, one and one-half (1½) inches of Trinidad asphalt wearing surface and one and one-half (1½) inches of asphaltic cement concrete binder were laid on a six (6) inch Portland cement concrete base by the Barber Asphalt Paving Company under a ten (10) years' maintenance guarantee.

Exchange place, between Congress and Kilby streets, was resurfaced with one and one-half (1½) inches of Trinidad asphalt wearing surface on one and one-half (1½) inches of asphaltic cement and concrete binder on the existing Portland cement concrete base by the Barber Asphalt Paving Company under a ten (10) years' maintenance guarantee. The company removed the old surface and laid some Portland cement concrete which was required to smooth out the inequalities in the old base.

Harrison avenue, from Union Park street to Malden street, was paved with one and one-half (1½) inches of Trinidad asphalt wearing surface on one and one-half (1½) inches of asphaltic cement concrete binder on a six (6) inch American cement concrete base under a ten (10) years' maintenance guarantee by the Barber Asphalt Paving Company. The track area was paved with large granite blocks on a six (6) inch Portland cement concrete base by John E. Burns & Co., who excavated the roadway and did the regulating. Former pavement was granite blocks on gravel base.

Harrison avenue, from Northampton street to East Lenox street, was paved with two (2) inches of Sicilian Rock asphalt on a six (6) inch Portland cement concrete base under a ten (10) years' maintenance guarantee by the Boston Asphalt Company, with the exception of the track area, which was paved with large granite blocks with pitch and pebble joints on a six (6) inch Portland cement concrete base by H. Gore & Co., who excavated the roadway and did the regulating. Former pavement was macadam.

BITULITHIC PAVEMENT.

This is a patent pavement composed of crushed stone and bituminous cement. It is laid six (6) inches deep, four inches of which is composed of No. 1 crushed stone well rolled and treated with two layers of bituminous cement. The other two (2) inches, or wearing surface, is composed of crushed stone varying in size from two (2) inches to a fine dust, and heated and mixed with bituminous cement and rolled with a steam roller. This pavement was laid by the Warren Bros. Company in the following streets, under a ten (10) years maintenance guarantee:

Belvidere street, Massachusetts avenue to Falmouth street. The contractor prepared the roadbed and did the regulating. Former pavement was macadam.

Berkeley street, Beacon street to Boylston street. The contractor prepared the roadbed and did the regulating. Former pavement was macadam.

Dartmouth street, Beacon street to Newbury street. The contractor prepared the roadbed and did the regulating. Former pavement was macadam.

Gainsborough street, Huntington avenue to N.Y., N.H. & H. R.R. The contractor prepared the roadbed and did the regulating. Former pavement was macadam.

Massachusetts avenue, Columbus avenue to Huntington avenue, except the track area, which was paved with large granite blocks, with pitch and pebble joints, on a Portland cement concrete base. The roadbed was prepared by the contractor, who also did the block paving and regulating. Former pavement was macadam.

Oneida street, Harrison avenue to Albany street. The roadbed was prepared and the street regulated by the city. Former pavement was macadam.

West Newton street, Columbus avenue to Huntington avenue and Huntington avenue to Falmouth street. The contractor prepared the roadbed and did the regulating. Former pavement was macadam.

Bowen street, E street to F street. The roadbed was prepared and the street regulated by Redmond McDonough.

E street, Broadway to Fourth street. The contractor prepared the roadbed. The regulating was done by W. Higgins. Former pavement was macadam.

Silver street, E street, 221 feet westerly. The contractor prepared the roadbed. The regulating was done by W. Higgins. Former pavement was macadam.

Silver street, A to B street. The contractor prepared the roadbed. The regulating was done by W. Higgins. Former pavement was macadam.

West Fourth street, E street, 221 feet westerly. The contractor prepared the roadbed. The regulating was done by W. Higgins. Former pavement was macadam.

ASSESSMENT STREETS.

The following streets have been constructed under the provisions of chapter 323 of the Acts of 1891, and the acts in amendment thereof or in addition thereto:

Adams street, Charlestown, between Common and Chestnut streets, was relocated and widened July 18, 1901. The contract for constructing the surface of the street was awarded to P. Brennan & Co., August 14, 1902; work was begun April 15, 1903, and completed May 8, 1903. It is paved with large granite blocks, with gravel joints on a gravel base.

Ainsley street, from Rosemont street, southerly, 228 feet. Laid out October 21, 1901. A contract for constructing the surface of this street was awarded to John E. Gill, May 27, 1903, and work was begun June 10, 1903, and completed August 7, 1903.

It is a 6-inch macadam roadway with crushed stone sidewalks. The edgestones and paving blocks were furnished by the city on the line of the work. The flagging and crushed stone were furnished by the city and hauled by the contractor.

Austin street, between Washington and Lawrence streets, is 643 feet long, and was relocated September 11, 1901. A contract for constructing the surface of this street was awarded to J. J. Sullivan, June 4, 1903; work was begun June 18, 1903, and completed September 10, 1903. It is paved with large granite blocks, with pitch and pebble joints on a six (6) inch Portland cement concrete base; the sidewalks are paved with brick. The edgestones, paving blocks, flagging, bricks, crushed stone and cement were furnished by the city on the line of the work.

Bennington street, Day square to Revere town line, 9,621 feet long, was widened to 100 feet, and relocated June 27, 1899. This street has a 60-foot Telford macadam roadway, with granite block gutters, two (2) twenty (20) foot sidewalks; twelve (12) feet of each are loam and the balance is composed of brick or crushed stone. The section between Moore and Saratoga streets was awarded to James Doherty, October 23, 1902; work was begun on this section October 29, 1902, and suspended December 23, 1902; resumed March 24, 1903, and completed September 19, 1903. The section between Saratoga street and the Revere town line was awarded to Coleman Bros. May 22, 1903, and work was begun on this section June 10, 1903, and will be completed during the summer of 1904.

Blanche street, between Green Hill and Preston streets, is 390 feet long, and was laid out September 25, 1901. A contract for constructing the surface of this street was awarded to John E. Gill, July 3, 1903; work was begun July 7, 1903, and completed October 7, 1903. It is a 6-inch macadam roadway, with granite block gutters and crushed stone sidewalks. The edgestones, flagging, and crushed stone were furnished by the city and hauled by the contractor to the line of the work. The granite paving blocks were furnished by the city and delivered on the line of the work.

Blandford street, Commonwealth avenue to B. & A. R.R., is 399 feet long, and was laid out January 24, 1899. A contract for constructing a concrete wall on the line of the B. & A. R.R. was awarded to P. McGovern, May 6, 1903, and work was begun May 18, 1903, and completed June 18, 1903. A contract for constructing the surface of this street was awarded to Philip Doherty, August 10, 1903; work was begun August 18, 1903, and completed September 28, 1903. It is a 6-inch macadam roadway, with granite block gutters and sidewalks of crushed stone. The edgestones, flagging and crushed stone were furnished by the city and hauled to line of work by the contractor. The gutter blocks were furnished by the city on the line of the work.

Bird street, Hancock street to Columbia road, is 327 feet long, and was laid out November 6, 1899. A contract for constructing the surface of this street was awarded to John F. Cullen, October

28, 1902; work was begun November 22, 1902, and suspended December 24, 1902; work was resumed March 19, 1903, and completed May 28, 1903. This is a 6-inch macadam roadway, with granite block gutters and sidewalks of crushed stone. The edgestones and crushed stone were furnished by the city and hauled to the line of the work by the contractor; the gutter blocks and flagging were furnished by the city on the line of the work.

Bow street, Washington street to City square, is 660 feet long, and was relocated and widened August 14, 1901. A contract for constructing the surface of this street was awarded to Coleman Bros., June 5, 1903; work was begun September 12, 1903, and completed November 16, 1903. It is paved with large granite blocks, with pitch and pebble joints, on a 6-inch Portland cement concrete base. The edgestones, paving blocks, flagging, bricks, crushed stone and cement for concrete base were furnished by the city on the line of the work.

Bowen street, between E and F streets, is 515 feet long, and was laid out October 30, 1901. A contract for constructing the sidewalks, crosswalks, etc., was awarded to Redmond McDonough April 20, 1903; work was begun April 30, 1903, and completed May 23, 1903. The edgestones and flagging were furnished by the city and hauled by the contractor to the line of the work; the paving blocks for the crosswalks and bricks for the sidewalks were furnished by the city on the line of the work. A contract for constructing the surface of this street was awarded to the Warren Bros. Company, April 21, 1903; work was begun May 19, 1903, and was completed May 22, 1903. The surface of this street is bitulithic pavement laid on a four (4) inch crushed stone foundation, under a ten (10) years' maintenance guarantee. The crushed stone for the foundation was furnished by the city on the line of the work.

Brookline avenue, between the Longwood avenue entrance to the Back Bay Fens and the Riverway, is about 3,100 feet long, and was relocated October 13, 1899. A contract for constructing the surface of this street was awarded to J. C. Coleman & Son December 26, 1901; work was begun August 28, 1902, and completed June 12, 1903. This is a six (6) inch macadam roadway with crushed stone sidewalks and granite block gutters. The straight edgestone and crushed stone were furnished by the city and hauled by the contractor to the line of the work. The circular edgestone, paving blocks, and bricks were furnished by the city on the line of the work.

Bynner street, between Day and Creighton streets, is about 331 feet long, and was laid out March 18, 1896. A contract for constructing the surface of this street was awarded to Thomas J. Shea October 28, 1902; work was begun December 8, 1902, and was suspended December 24, 1902; work was resumed March 30, 1903, and completed June 19, 1903. This is a six (6) inch macadam roadway with granite block gutters and crushed stone sidewalks. The straight edgestone, flagging, and crushed stone

were furnished by the city and hauled by the contractor; the circular edgestone and paving blocks were furnished by the city and were delivered on the line of the work.

Capen street, between Evans and Fairmount streets, is about 1,127 feet long, and was laid out October 7, 1901. The contract for constructing the surface of this street was awarded to Timothy J. Bradley, August 2, 1902; work was begun October 29, 1902, suspended January 3, 1903, resumed March 25, 1903, and completed July 1, 1903. This is a six (6) inch macadam roadway with crushed stone sidewalks and granite block gutters. The edgestones, flagging and crushed stone were furnished by the city and hauled by the contractor. The granite blocks were furnished and delivered by the city on the line of the work.

Calder street, between Blue Hill avenue and Canterbury street, is about 506 feet long, and was laid out October 3, 1902. The contract for constructing the surface of this street was awarded to John F. Cullen, June 15, 1903; work was begun June 22, 1903, and completed July 28, 1903. This is a six (6) inch macadam roadway with granite block gutters and crushed stone sidewalks. The edgestones and granite blocks were furnished by the city and delivered on the line of the work. The flagging and crushed stone were furnished by the city and hauled by the contractor.

Carleton street, Yarmouth street to West Newton street, is about 929 feet long, and was laid out July 30, 1901. The contract for constructing the surface of this street was awarded to Joseph B. O'Rourke, May 18, 1903; work was begun August 6, 1903, and completed September 25, 1903. This is a six (6) inch macadam roadway with granite block gutters and brick sidewalks. The straight edgestones, flagging and crushed stone were furnished by the city and hauled by the contractor; the circular edgestone, gutter blocks and bricks were furnished on the line of the work by the city.

Charlotte street, between Blue Hill avenue and Bradshaw street, is about 902 feet long, and was laid out June 6, 1896. The contract for constructing the surface of this street was awarded to Edward J. Hayden, April 25, 1903; work was begun May 4, 1903, and completed October 9, 1903. This is a six (6) inch macadam roadway with granite block gutters and granolithic sidewalks, with planting spaces. The straight edgestone, flagging and crushed stone were furnished by the city and hauled by the contractor. The circular edgestones and gutter blocks were furnished by the city on the line of the work. The loam for the planting spaces was furnished by the contractor. The sidewalks were built under a subsequent contract for artificial stone.

Columbia road, Blue Hill avenue to Marine Park, is 20,807 feet long, and was laid out and relocated August 31, 1897. The portion between Blue Hill avenue and the N.Y., N.H. & H. R.R., Plymouth Division, has been completed. It is a Telford macadam construction consisting of two (2) roadways, one for pleasure driving and the other for ordinary traffic; it has a twenty five (25) foot reservation between the two roadways for surface cars.

The sidewalks are thirteen (13) feet wide on the pleasure drive and ten (10) feet wide on the traffic road. Between Edward Everett square and Buttonwood street it is a single roadway of Telford macadam; crushed stone sidewalks with a planting space between the sidewalk and roadway. Between Buttonwood street and the bridge, it is composed of two (2) roadways, one of Telford macadam for ordinary traffic and a nine (9) inch macadam road for a pleasure drive; between the roadways is a fifteen (15) foot reservation for surface cars; the sidewalks are composed of crushed stone. On the pleasure drive there is a planting space between the sidewalk and roadway; on the traffic side there are large planting spaces back of the sidewalks. Between the bridge and Covington street the contract for constructing was awarded to Timothy F. Bradley, July 15, 1903; work was begun August 18, 1903, and is now in progress. The section between Covington and I streets was awarded to H. P. Nawn, May 5, 1903; work was begun July 20, 1903, and will be completed during the next year. The section between I and Q streets was awarded to H. P. Nawn, contract dated November 18, 1902. Work was begun April 24, 1903, and is now in progress.

Cummington street, Blandford to Lawton streets, is about 1,186 feet long, and was laid out January 24, 1899. The contract for constructing the surface of this street was awarded to James J. Coughlan, September 24, 1903. Work was begun November 16, and is now in progress. It is a six (6) inch macadam roadway with crushed stone sidewalks.

Davenport street, Columbus avenue to Tremont street, is about 357 feet long, and was laid out November 20, 1902. A contract for constructing the surface of this street was awarded to John Connors, July 22, 1903. Work was begun August 10, 1903, and completed September 10, 1903. This is a six (6) inch macadam roadway, with granite block gutters and brick sidewalks. The straight edgestone, flagging and crushed stone were furnished by the city and hauled by the contractor. The circular edgestones, granite blocks and bricks were furnished by the city on the line of the work.

Devens street, Rutherford avenue to Washington street, is about 215 feet long, and was relocated and widened August 14, 1901. A contract for constructing and regulating this street was awarded to Coleman Bros., June 5, 1903. Work was begun September 29, 1903, and completed November 11, 1903. It is paved with large granite blocks with pitch and pebble joints on a six (6) inch Portland cement concrete base with brick sidewalks. The edgestones, paving blocks, flagging, bricks, cement and crushed stone were furnished by the city on the line of the work.

Dilworth street, Camden to Northampton streets, is about 324 feet long, and was laid out September 9, 1902. A contract for constructing the surface of this street was awarded to William J. Barry, August 10, 1903. Work was begun August 13, 1903,

and completed September 10, 1903. This is a six (6) inch macadam roadway, with granite block gutters and brick sidewalks. The straight edgestones, flagging and crushed stone were furnished by the city and hauled by the contractor. The circular edgestones, gutter blocks and bricks were furnished by the city on the line of the work.

Dunreath street, Aspen street westerly about 355 feet, was extended November 6, 1902. A contract for constructing the surface of this street was awarded to John F. Cullen, August 10, 1903. Work was begun August 25, 1903, and completed October 7, 1903. This is a six (6) inch macadam roadway with block gutters and brick sidewalks. The straight edgestones, flagging and crushed stone were furnished by the city and hauled by the contractor. The circular edgestones, gutter blocks and bricks were furnished by the city on the line of the work.

Elmont street, Waterlow to Faxon streets, is about 780 feet long, and was laid out September 23, 1902. A contract for constructing the surface of this street was awarded to Edward J. Hayden, August 10, 1903. Work was begun September 1, 1903, and completed November 2, 1903. This is a six (6) inch macadam roadway with granite block gutters and brick sidewalks. The straight edgestones, flagging and crushed stone were furnished by the city and hauled by the contractor. The circular edgestones, gutter blocks and bricks were furnished by the city on the line of the work.

Florida street, Templeton to Ashmont street, is about 694 feet long, and was laid out December 21, 1901. A contract for constructing the surface of this street was awarded to H. Gore & Co., May 25, 1903. Work was begun June 18, 1903, and completed November 6, 1903. This street was built to conform with the rest of Florida street previously built, with a loam space in the centre and a macadam roadway on each side. The sidewalks, also, have a loam space between the walk and the edgestone. The crushed stone and flagging were furnished by the city and hauled by the contractor. The edgestones and gutter blocks were furnished and delivered by the city on the line of the work.

Hamblen street, Arlington street, across George street, is about 335 feet long, and was laid out April 16, 1902. A contract for constructing the surface of this street was awarded to P. Brennan & Co., April 28, 1903. Work was begun May 22, 1903, and completed June 27, 1903. It is paved with granite blocks on a gravel base, with brick sidewalks. The edgestones, flagging, paving blocks and bricks were furnished by the city on the line of the work.

Haverford street, from Cornwall street 310 feet northeasterly, was laid out September 8, 1902. A contract for constructing the surface of this street was awarded to William J. Barry, March 13, 1903. Work was begun March 18, 1903, and completed April 30, 1903. This is a six (6) inch macadam roadway, with granite block gutters and brick sidewalks. The straight edgestones, flagging and crushed stone were furnished by the city and

hauled by the contractor. The circular edgestones, gutter blocks and bricks were furnished and delivered by the city on the line of the work.

Hinckley street, between Pleasant and Bakersfield streets, is about 406 feet long, and was laid out September 24, 1901. A contract for constructing the surface of this street was awarded to John E. Gill, October 21, 1902. Work was begun November 3, 1902, and was suspended December 11, 1902. Work was resumed April 14, 1903, and completed April 25, 1903. This street is a six (6) inch macadam roadway, with granite block gutters and crushed stone sidewalks. The straight edgestones and crushed stone were furnished by the city and hauled by the contractor. The flagging and paving blocks were furnished and delivered by the city on the line of the work.

Hale street, extended to South Margin street, November 21, 1902, is about 154 feet long. A contract for constructing the surface of this street was awarded to D. J. Kiley, August 10, 1903. Work was begun September 3, 1903, and completed September 30, 1903. It is paved with granite blocks on gravel base, with brick sidewalks. The straight edgestones, flagging and gutter blocks were furnished by the city and hauled by the contractor. The bricks for the sidewalks were furnished and delivered by the city on the line of the work.

Moultrie street, Allston to Washington streets, is about 1,328 feet long, and was laid out October 1, 1901. A contract for constructing the artificial stone sidewalks was awarded to Warren Bros., July 13, 1903. Work was begun July 23, 1903, and completed September 1, 1903.

Lindsey street, Waldeck street to Greenbrier street, is about 1,240 feet long, and was laid out October 1, 1901. A contract for constructing the surface of this street was awarded Daniel E. Lynch, November 28, 1902. Work was begun March 12, 1903, and completed May 9, 1903. It is a six (6) inch macadam roadway with granite block gutters. The straight edgestones, flagging and crushed stone were furnished by the city and hauled by the contractor. The gutter blocks were furnished and delivered by the city on the line of the work. A contract for constructing the artificial stone sidewalks was awarded to Warren Bros. Company, May 21, 1903. Work was begun June 9, 1903, and completed July 15, 1903.

Millet street, Talbot avenue to Southern avenue, is about 471 feet long, and was laid out October 29, 1902. A contract for constructing the surface of this street was awarded to Frank A. Foster, May 20, 1903. Work was begun October 9, 1903, and completed November 18, 1903. It is a six (6) inch macadam roadway with granite block gutters and crushed stone sidewalks. The straight edgestones, flagging and crushed stone were furnished by the city and hauled by the contractor. The gutter blocks and bricks were furnished and delivered by the city on the line of the work.

Oswald street, Calumet to Hillside street, is about 298 feet long,

and was laid out November 24, 1902. A contract for constructing the surface of this street was awarded to Philip Doherty, November 19, 1903. Work was begun November 24, 1903, and will be completed some time during the next year. It is a six (6) inch macadam roadway.

Public alley 12, from Poplar street to Public alley No. 14, is about 77 feet long, and was laid out October 29, 1902. A contract for excavating and regulating this alley was awarded to D. J. Kiley, July 15, 1903. Work was begun August 1, 1903, and completed August 29, 1903. A contract for constructing the asphalt surface of this alley was awarded to the Boston Asphalt Company, July 20, 1903. Work was begun September 14, 1903, and completed September 22, 1903. This asphalt surface was laid under a ten (10) years' maintenance guarantee.

Public alley 13, Poplar street to Public alley No. 14, is about 78 feet long, and was laid out October 29, 1902. A contract for constructing the surface of this alley was awarded to D. J. Kiley, July 15, 1903. Work was begun August 1, 1903, and completed August 29, 1903. It is a granite block pavement with grout joints laid on a gravel base. The sidewalks are composed of concrete one (1) foot in width to support the edgestones.

Public alley 14, from Public alley No. 12 to Public alley No. 15, is about 464 feet long, and was laid out October 29, 1903. A contract for constructing the surface of this alley was awarded to D. J. Kiley, July 15, 1903. Work was begun August 1, 1903, and completed August 29, 1903. It is a granite block pavement with grout joints laid on a gravel base. The sidewalks are composed of concrete one (1) foot in width, which was used to support the edgestones.

Public alley 15, Poplar street to Public alley No. 14, is about 84 feet long, and was laid out October 29, 1902. A contract for constructing the surface of this alley was awarded to D. J. Kiley, July 15, 1903. Work was begun August 1, 1903, and completed August 29, 1903. It is a granite block pavement with grout joints laid on a gravel base. The sidewalks are one (1) foot in width, composed of concrete, this being used to support the edgestones.

Public alley 502, from a common passageway to Public alley 503, is about 475 feet long, and was laid out August 26, 1901. A contract for constructing the surface of this alley was awarded to Benjamin M. Cram, November 18, 1902. Work was begun November 19, 1902, suspended December 31, 1902, resumed March 18, 1903, and completed April 3, 1903. It is a granite block pavement with grout joints laid on a gravel base with brick sidewalks. As about all the yards are below the level of the sidewalks, concrete walls were built at the back of the sidewalks, extending two (2) feet below the grade of the yards.

Public alley 503, from Concord street to Rutland square, is about 211 feet long, and was laid out August 26, 1901. A contract for constructing the surface of this alley was awarded to Benjamin M. Cram, March 20, 1903. Work was begun April 6,

1903, and completed April 21, 1903. It is a granite block pavement with grout joints laid on a gravel base with brick sidewalks. As about all the yards are below the level of the sidewalks, concrete walls were built at the back of the sidewalks, extending two (2) feet below the level of the yards.

Public alley 804, from Public alley 803 to Public alley 805, is about 530 feet long, and was laid out September 23, 1902. A contract for constructing the surface of this alley was awarded to James J. Coughlan, October 24, 1903. Work was begun October 30, 1903, and completed December 4, 1903. It is a granite block pavement with grout joints on a gravel base. The sidewalks are composed of concrete one (1) foot in width, which was used to support the edgestones.

Public alley 441, between Boylston and Newbury streets, from Exeter to Fairfield streets, is about 622 feet long, and was laid out October 13, 1899. A contract for excavating and regulating this alley was awarded to Benjamin M. Cram, August 30, 1900. Work was begun April 14, 1903, and completed May 5, 1903. The contract for the asphalt surface of this alley was awarded to the Boston Asphalt Company, August 29, 1900. Work was begun May 11, 1903, and completed May 25, 1903. This surface was laid under a ten (10) years' maintenance guarantee.

Ritchie street, Columbus avenue to Marcella street, is about 870 feet long, and was laid out October 25, 1901. A contract for constructing the surface of this street was awarded to Robert Eagar, May 20, 1903. Work was begun May 25, 1903, and completed September 8, 1903. It is a six (6) inch macadam roadway with granite block gutters and crushed stone sidewalks. The straight edgestones, flagging and crushed stone were furnished by the city and hauled by the contractor. The circular edgestones and gutter blocks were furnished and delivered on the line of the work by the city. A contract for doing the rough grading was awarded to Mark H. Lynch, January 2, 1903, and completed May 25, 1903.

Roseclair street, Boston street to Dorchester avenue, is about 1,291 feet long, and was laid out October 3, 1902. A contract for constructing the surface of this street was awarded to William J. Rafferty, August 10, 1903. Work was begun August 17, 1903, and completed October 30, 1903. It is a six (6) inch macadam roadway with granite block gutters and crushed stone sidewalks. All the materials were furnished on the line of the work by the city.

Rosemont street, Adams street to Gustine avenue, is about 385 feet long, and was laid out October 21, 1901. A contract for constructing the surface of this street was awarded to James J. Coughlan, May 20, 1903. Work was begun June 3, 1903, and completed August 4, 1903. It is a six (6) inch macadam roadway with granite block gutters and crushed stone sidewalks. The crushed stone and flagging were furnished by the city and hauled by the contractor. The edgestones and gutter blocks were furnished by the city on the line of the work.

Rutherford avenue, Devens to Chapman street, is about 976 feet long, and was widened and relocated August 14, 1901. A contract for constructing the surface of this street was awarded to John E. Burns & Co. June 5, 1903. Work under this contract was begun June 24, 1903, and completed October 24, 1903. It is a granite block pavement with pitch and pebble joints on a six (6) inch Portland cement concrete base, and brick sidewalks. All materials required were furnished by the city on the line of the work.

Seymour street, between Brown avenue and Canterbury street, is about 1,149 feet long, and was laid out August 18, 1902. A contract for constructing the surface of this street was awarded to Thomas F. Minton, October 27, 1903. Work was begun October 29, 1903, and will be completed during the season of 1904. It is a six (6) inch macadam roadway with granite block gutters and crushed stone sidewalks.

South Huntington avenue, between Heath and Centre streets, is about 3,424 feet long, and was laid out March 4, 1901. A contract for constructing the surface of this street was awarded to James Doherty, November 24, 1902. Work was begun March 12, 1903, and completed July 25, 1903. This is a six (6) inch macadam roadway with granite block gutters and crushed stone sidewalks. The straight edgestone, flagging and crushed stone were furnished by the city and hauled by the contractor. The circular edgestones and gutter blocks were furnished by the city on the line of the work.

St. Margaret street, between Boston and Roseclair streets, is about 996 feet long, and was laid out October 3, 1902. A contract for constructing the surface of this street was awarded to William J. Rafferty, June 8, 1903. Work was begun June 30, 1903, and completed September 25, 1903. It is a six (6) inch macadam roadway with granite block gutters and brick sidewalks. The straight edgestone, flagging and crushed stone were furnished by the city and hauled by the contractor. The circular edgestones, gutter blocks and bricks were furnished by the city on the line of the work.

Spalding street, South street to the N.Y., N.H. & H. R.R., Providence Division, is about 335 feet long, and was laid out November 17, 1902. A contract for constructing the surface of this street was awarded to Thomas J. Shea October 5, 1903. Work was begun October 7, 1903, and completed November 3, 1903. It is a six (6) inch macadam roadway with granite block gutters and brick sidewalks. The straight edgestone, flagging and crushed stone were furnished by the city and hauled by the contractor. The circular edgestones, bricks and gutter blocks were furnished by the city on the line of the work.

Swallow street, between N and O streets, is about 521 feet long, and was laid out October 25, 1902. A contract for constructing the surface of this street was awarded to the Hub Construction and Supply Company, October 3, 1903. Work was begun October 8, 1903, and completed November 16, 1903. It is a six (6)

inch macadam roadway with granite block gutters and brick sidewalks. The edgestone, flagging and crushed stone were furnished by the city and hauled by the contractors. The gutter blocks and bricks were furnished by the city on the line of the work.

Tower street, Hyde Park avenue to Forest Hills Cemetery, is about 1,114 feet long, and was laid out October 30, 1901. A contract for constructing the surface of this street was awarded to Thomas F. Welch, June 1, 1903. Work was begun June 8, 1903, and completed August 15, 1903. It is a six (6) inch macadam roadway with granite block gutters and crushed stone sidewalks. The straight edgestone, flagging and crushed stone were furnished by the city and hauled by the contractor. The circular edgestone and gutter blocks were furnished by the city on the line of the work.

Vicksburg street, East First street to East Second street, is about 267 feet long, and was laid out September 25, 1902. A contract for constructing the surface of this street was awarded to the Hub Construction and Supply Company, April 11, 1903. Work was begun April 21, 1903, and completed May 22, 1903. It is a six (6) inch macadam roadway with granite block gutters and brick sidewalks. The straight edgestone and crushed stone were furnished by the city and hauled by the contractor. The flagging, gutter blocks and bricks were furnished by the city on the line of the work.

Walter street, Centre street to South street, is about 3,735 feet long, and was relocated and laid out October 4, 1901. A contract for constructing the surface of this street was awarded to Thomas F. Welch, June 4, 1903. Work was begun under this contract June 30, 1903, and will be completed during the season of 1904. A contract for doing the rough grading of this street was awarded to Thomas F. Welch, October 16, 1902, and completed May 8, 1903.

Washington street, between Talbot avenue and Euclid street, is about 520 feet long, and was relocated and laid out October 1, 1901. A contract for constructing the surface of this street was awarded to Thomas J. Shea, November 24, 1902, and suspended December 11, 1902. Work was resumed April 24, 1903, and completed June 24, 1903. It is a six (6) inch macadam roadway with granite block gutters and crushed stone sidewalks. The edgestone, flagging and crushed stone were furnished by the city and hauled by the contractor. The gutter blocks were furnished by the city on the line of the work.

Washington street, Spring lane to Old South Church line, is about 145 feet long; widened and construction ordered July 10, 1902. A contract for paving and regulating this portion of the street was awarded to the Metropolitan Contracting Company, October 2, 1902. Work under this contract was begun July 28, 1903, and completed August 8, 1903. It is paved with large granite blocks, with pitch and pebble joints, on a six (6) inch Portland cement concrete base. All the materials required in doing the work were furnished by the city on the work except the cement, which was furnished by the contractors.

Wayland street, Howard avenue to Dacia street, is about 630 feet long, and was extended and laid out September 25, 1901. The contract for constructing the surface of this street was awarded to John Connors, October 9, 1902. Work was begun October 17, 1902, suspended December 8, 1902, resumed March 25, 1903, and completed April 11, 1903. It is a six (6) inch macadam roadway with granite block gutters and brick sidewalks. The edgestone, flagging and crushed stone were furnished by the city and hauled by the contractor. The gutter blocks and bricks were furnished by the city on the line of the work.

Winthrop street, between Dennis street and Brook avenue, is about 332 feet long, and was laid out October 21, 1901. The contract for constructing the surface of this street was awarded to J. C. Coleman & Son, October 3, 1902. Work under this contract was begun October 22, 1902, suspended November 9, 1902, resumed April 21, 1903, and completed May 16, 1903. It is a six (6) inch macadam roadway with granite block gutters and crushed stone sidewalks. The edgestone, flagging and crushed stone were furnished by the city and hauled by the contractor. The gutter blocks were furnished by the city on the line of the work.

Walk Hill street, between South and Washington streets, was laid out January 26, 1901. The contract for constructing the surface of this street was awarded to Thomas F. Minton, April 27, 1903; work was begun May 12, 1903, and completed July 28, 1903. It is a six (6) inch macadam roadway, with granite block gutters and crushed stone sidewalks. The edgestones, flagging, and crushed stone were furnished by the city and hauled by the contractor. The granite blocks were furnished by the city and delivered on the line of the work.

Yours respectfully,

HENRY V. MACKSEY,
Deputy Superintendent.

FINANCIAL STATEMENT.

REGULAR APPROPRIATION.

Maintenance	$850,000 00	
Amount collected for repairs made by Paving Division for different companies, etc. . . .	1,204 07	
Transfers from various appropriations	49,138 25	
		$900,342 32
Expenditures from February 1, 1903, to January 31, 1904		$900,342 32

SPECIAL APPROPRIATIONS, PAVING AND STREET IMPROVEMENTS.

Amount of balances, February 1, 1903	$169,190 21	
Amount of appropriations, 1903-04, revenues and transfers	790,755 60	
		$959,945 81
Expenditures from February 1, 1903, to January 31, 1904		784,461 20
Balances January 31, 1904		$175,484 61

TOTAL EXPENDITURES.

Maintenance appropriation, Paving Division	$900,342 32
Brandon street and Belgrade avenue	6,740 22
Carleton street, chapter 139, Acts of 1900	8,400 47
Dorchester street	13,007 07
Foot-bridge over N.Y., N.H & H. R.R. at Gainsborough street	2,060 35
Freeport street, retaining wall	203 00
Hyde Park avenue	8,417 10
Reconstruction of bridges over railroad tracks at Norfolk, Harvard, Medway and West Selden streets	52 04
Street improvements	782,145 81
Construction of highways already laid out	9,089 17
Highways, making of	328,554 94
Laying out and construction of highways, chapter 478 of the Acts of 1900	37,985 90
Laying out and construction of highways, East Boston	51,502 39
Laying out and construction of highways, Brighton	3,229 91
Laying out and construction of highways, Dorchester	60,984 38
Laying out and construction of highways, Roxbury and West Roxbury	62,404 13
	$2,275,119 20

INCOME.

Income showing the amount of bills deposited with the City Collector from February 1, 1903, on account of the Paving Division:

Edgestones and sidewalk assessments	$24,047 51

The amount paid into the City Treasury during the year on account of the Paving Division was as follows:

Sidewalk construction assessments (law of 1892),	$2,873 46
Sidewalk construction assessments (law of 1893),	23,822 63
	$26,696 09

Objects of Expenditures from the Regular Appropriation Classified by Districts, from February 1, 1903, to January 31, 1904.

DISTRICTS.	Repairs.	Snow.	Edgestone and Sidewalk Repairs.	Repairing Fences.	Repairing Plank-walks.	A. Miscellaneous.	In excess of Appropriation for Street Improvements.	Totals.
1. South Boston	$5,136 20	$11,121 50	$8,742 88	$777 75	$436 50	.....	$10,335 50	$36,550 33
2. East Boston	8,844 53	4,358 96	7,868 45	1,303 46	194 01	.....	7,732 95	30,302 36
3. Charlestown	10,125 34	6,327 28	3,565 33	238 52	.....	.....	2,652 64	22,909 11
4. Brighton	10,240 71	3,569 88	2,813 62	439 60	698 26	.....	17,528 60	35,290 67
5. West Roxbury	17,384 24	6,078 90	437 84	1,987 81	391 33	.....	22,348 18	48,628 30
6. Dorchester	41,355 21	8,068 31	12,186 59	994 76	1,748 36	.....	21,737 75	86,090 98
7. Roxbury	33,000 08	8,499 82	6,810 33	2,979 08	1,658 97	.....	17,375 75	70,324 03
8. South End	22,608 35	33,250 85	7,601 68	359 26	2,155 40	.....	23,359 32	89,334 86
9. Back Bay	12,697 52	6,487 22	9,337 95	1,938 07	351 55	.....	24,167 71	54,980 02
10. North End	26,446 27	26,633 22	5,740 45	47 77	71 46	.....	4,479 02	63,418 19
						$362,513 47	.....	362,513 47
Totals	$187,838 45	$114,395 94	$65,105 12	$11,066 08	$7,705 84	$362,513 47	$151,717 42	$900,342 32

SCHEDULE A.

Salaries of Deputy Superintendent and office employees		$11,837 85
Salaries of Permit office employees		8,534 30
Salaries of Inspectors		26,429 04
Salaries of Engineers		22,132 11
Holidays		52,897 60
Signs and numbers		8,250 45
Furniture		56 21
Repairs to offices, stables, sheds, etc.		1,786 42
Printing and stationery		6,463 15
Gas and electric lighting		441 17
Wharfage and rent		9,282 47
Medical attendance on injured employees		377 00
Fuel and oil		3,119 16
Taxes		383 97
Advertising		150 87
Sundries		624 09
Boiler insurance		406 31
Executions of court and damages		3,763 41
Expenses of yards and stables, including repairs to carts, harnesses, and care of horses, etc.	$181,107 55	
Less amount earned by division teams, etc.	82,661 12	
		98,446 43
Tools, cost of keeping same in repair, etc.		19,832 41
Veterinary services		1,433 32
Telephones		1,052 26
Artificial stone sidewalks		3,786 48
Street cleaning, suburban districts		68,664 01
Edgestones and sidewalks, new		5,281 23
Building new fences and plank walks		245 13
Crossing repairs		9,879 40
Crossings, new		4,326 92
Engineering supplies		458 77
Rent of towels		60 00
Photographs		11 90
Travelling expenses, car fares, etc.		925 27
Steam rollers, new		8,900 00
Building wall, Parker street		200 00
Ice		15 60
Stock		1,179 96
Stoves, pipes, etc.		108 80
Sanding icy streets		195 10
Building new stable and grading yard (Charlestown)		9,916 07
Building bulkhead at yard (Charlestown)		3,103 75
Carried forward		$394,958 39

Brought forward	$394,958 39
Building wall at Back Bay yard	247 10
Codman-street crusher, setting up new	18,704 67
Rosseter-street crusher, setting up new	13,222 24
Sea-wall at South yard	13,859 30
Shanties, repairing, etc.	586 80
Time allowed injured employees	1,083 82
Bleiler crusher, setting up new	12,925 18
Bowdoin street, Dorchester, removing ledge from sidewalk	1,405 00
	$456,992 50
Less amount earned by stone crushers ($92,612.39) and steam rollers ($1,866.64)	94,479 03
	$362,513 47

DETAIL OF EXPENDITURES UNDER SPECIAL APPROPRIATIONS.

Brandon street and *Belgrade avenue*	$6,740 22
Carleton street, chapter 139, Acts of 1900	8,400 47
Dorchester street	13,007 07
Foot-bridge over N.Y., N.H. & H. R.R., at Gainsborough street	2,060 35
Freeport street, retaining wall	203 00
Hyde Park avenue	8,417 10
Reconstruction of bridges over railroad tracks at Norfolk, Harvard, Medway and West Selden streets	52 04

STREET IMPROVEMENTS.

Adams street, Mill to Rosemont street	969 92
Adams street, Dudley to Hampden street	1,729 24
Advertising	429 20
Albany street, East Brookline to East Canton street	1,082 65
Alden street, Court to Sudbury street	782 99
Ashfield street, Walter to Fairview street	4,801 47
Ashland street, Florence street to Brown avenue, and *Brown avenue* at Ashland street	2,276 36
Asphalt repairs	5,086 22
Athens street, D to Dorchester street	5,412 43
Atkinson street, from Southampton street	538 50
Auckland street, Savin Hill avenue to Belfort street,	924 48
Bainbridge street, Dale to Kingsbury street	2,718 66
Baldwin street, Main street to Rutherford avenue	1,841 21
Bartlett street, Pearl to Walker street	655 34
Carried forward	68,128 92

Brought forward	$68,128 92
Battery street, at Commercial street	493 36
Baxter street, C to D street	2,268 01
Belvidere street, Massachusetts avenue to West Newton street, and *West Newton street*, Belvidere street to Huntington avenue	10,808 55
Berkeley street, Beacon to Boylston street	18,600 04
Beverly street, Washington street, north, to Warren bridge	30,172 27
Bickford street, Bromley park to Centre street	1,765 23
Blagden street, Huntington avenue to Exeter street	1,673 34
Boylston street, Berkeley street, across Clarendon street	*3,432 32
Breed street, from Gladstone street	748 31
Bremen street, railroad crossing to Curtis street	1,182 63
Brighton avenue, Union square to Linden street	1,873 23
Broad street, Atlantic avenue to Central street	†28,947 03
Broad street, Central to State street	508 51
Brooks street, White to Princeton and Morris to Chelsea street	2,564 38
Brown avenue (see Ashland street).	
Byron street, Coleridge to Saratoga street	1,868 44
C street, Broadway to West First street	1,903 19
Call street, Carolina avenue to Gordon street	843 16
Cambria street, Dalton to Bothnia street	273 28
Cambridge street, railroad bridge to the river	17,822 26
Canterbury street, Blue Hill avenue to Morton street, and Ashland to Mt. Hope street	13,538 54
Carson street, Crescent avenue to Shoreham street,	6,602 11
Carver street, Boylston to Eliot street	1,527 30
Centre street, Beech to Spring street,	9,218 46
Chambers street, Allen to Poplar street	1,990 35
Charles street, Dorchester to Geneva avenue	10,491 58
Chelsea street, Eagle square to Chelsea bridge	867 65
Chester street, Brighton avenue to Gardner street	1,781 05
Chestnut Hill avenue, Beacon street to Strathmore road	739 15
Church street, Centre street to Brookline line	3,609 78
Clapp street, Boston street to Massachusetts avenue	1,005 37
Clarendon street, Beacon street to St. James avenue	2,271 48
Clarkson street	567 88
Columbia road, Edward Everett square to Quincy street	11,542 77
Common street, Tremont to Washington street	2,380 44
Carried forward	$264,010 37

*$563.50 paid by Boston Elevated Railway Company.
†$582.37 paid by Boston Elevated Railway Company.

Brought forward	$264,010 37
Commonwealth avenue	263 52
Condor street, Glendon to Brooks street	5,300 32
Cook street, Bunker Hill to Medford street	2,539 13
Coolidge road, Mansfield to North Harvard street,	4,203 60
Copley street, Atherton to School street	399 11
Copley square, artificial stone sidewalks	2,344 30
Corey street, Centre to Park street	196 00
Cotting street, Lowell to Wall street	343 69
Court street, Sudbury to Green street	*13,370 42
Cowper street, Moore to Short street	1,283 20
Crescent avenue, Dorchester avenue to railroad	3,325 96
Cross street, Endicott to Washington street, north,	1,164 23
Cumberland street, Huntington avenue to railroad,	2,445 97
Cunard street, Cabot to Tremont street	542 62
Curtis street, Saratoga to Chelsea street	328 50
Danforth street	550 92
Dartmouth street, Beacon to Boylston street	26,254 38
Deerfield street, Beacon street to the river	1,470 57
Dighton place, from Washington street	2,319 44
Dillon street, Lenox to Sawyer street	80 00
Division street, Dorchester avenue to Foundry street	3,083 00
Dorchester avenue, Roach to Freeport street	4,277 36
Dorchester avenue, Adams to Ellet street	463 96
Dover street, Harrison avenue to Washington street	10,515 14
Dresser street, E to F street	2,317 53
Duncan street, Greenwich to Leonard street	4,213 14
E street, West First street to Broadway, and West Fifth to West Sixth street	3,236 62
E street, Broadway to West Fourth street	4,254 19
East Brookline street, Albany to Washington street, and Shawmut avenue to Tremont street	2,958 91
East Cottage street, Columbia road to Humphreys street	226 00
East Eagle street, Chelsea to Putnam street	6,704 06
East Fourth street, I to K street	2,522 06
Eden street, Main to Russell street	1,579 70
Egleston street, Boylston to School street	922 18
Eleanor street, Ridgemont to Cambridge street	660 99
Elm street, Washington to Hanover street	1,169 68
Elmo street, Erie to Greenwood street	4,660 78
Endicott street, Hanover to Stillman street	553 83
Essex street, Commonwealth avenue to the river	934 90
Eustis street, Dearborn to Magazine street	2,531 11
Eutaw street, Brooks to Marion street	1,292 03
Everett street, Lamson to Jefferies street	2,636 73
Carried forward	$394,450 15

*$1,782.60 paid by Boston Elevated Railway Company.

Brought forward	$394,450 15
Exchange place, Congress to Kilby street	1,437 77
Exeter street, Beacon to Boylston street	1,915 90
F street, West Second to West Eighth street	5,878 13
Fairfield street, Beacon to Boylston street	2,889 99
Falmouth street, Massachusetts avenue to Belvidere street	1,887 37
Ferdinand street, Columbus avenue to Castle square,	3,759 60
Florence street, Ashland street to Brown avenue	4,290 25
Foss street, Chelsea to Water street	1,202 55
Franklin street, Main to High street	1,038 80
Fremont street, Norfolk street to Blue Hill avenue,	1,402 61
Fulda street, Highland to Ellis street	2,841 57
G street, East Eighth street to Thomas park	1,772 35
Gainsborough street, Huntington avenue to the railroad	8,586 27
Gardner street, Heldun to Morrison street	877 28
Garland street, Washington street to Shawmut avenue	1,201 20
Gay Head street, Centre to Minden street	6,073 06
Georgia street, Elm Hill avenue to Blue Hill avenue,	2,438 48
Gerard street, Massachusetts avenue to Norfolk avenue	11,528 78
Gladstone street, Walley to Breed street	4,163 40
Gloucester street, Beacon to Boylston street	2,712 14
Gold street, D to E street	1,574 06
Gordon street, Cambridge to North Beacon street	1,874 00
Granger street, Clayton to Duncan street	3,093 76
Green street, High to Bunker Hill street	1,562 74
Green street, Union avenue to railroad bridge	658 72
Greenough lane, Charter to Commercial street	527 44
Greenwich street, Dorchester avenue to Freeport street	1,770 14
Hancock street, Dorchester avenue to Pleasant street	3,944 73
Hanover street, Washington, across Union street	*5,316 45
Harrison avenue, Bennett street to the bridge	5,650 50
Harrison avenue, Dover to Laconia street	2,212 89
Harrison avenue, Laconia to Savoy street	2,398 76
Harrison avenue, Savoy to Union Park street	2,581 08
Harrison avenue, Union Park to Malden street	2,240 90
Harrison avenue, Northampton to East Lenox street	7,377 90
Harrison avenue, Thorndike to Warren street	17,927 86
Harvard avenue, Commonwealth avenue to Brookline avenue	736 18
Haviland street, Massachusetts avenue to Hemenway street	1,421 11
Carried forward	$525,216 87

* $774.07 paid by Boston Elevated Railway Company.

Brought forward	$525,216 87
Hawley street, Milk to Franklin street	*——
Heath street, Heath place to Parker street	2,569 54
Hemenway street, Boylston to Norway street	550 70
Hereford street, Beacon to Boylston street	3,509 14
Homer street, Moore to Byron street	1,337 31
Homestead street, Walnut avenue to Humboldt avenue	6,947 79
Horace street, Moore to Byron street	2,017 50
Humboldt avenue, at Seaver street	294 00
Humphreys street, East Cottage to Dudley street	1,536 95
Hunneman street, Washington to Albany street	11,126 14
Huntington avenue, Gainsborough to Tremont street	16,187 36
I street, East Broadway to East Second street	2,315 69
Irvington street, Huntington avenue to railroad	722 31
Island street, Hampden to Magazine street	4,111 40
Jeffries street, Maverick to Marginal street	960 50
Kensington street, Elmore to Kingsbury street	2,488 39
Kenwood street, Washington to Seaborn street	2,878 16
Keyes street, Call to Washington street	143 50
Kingsbury street, Washington to Bainbridge street,	975 83
Knapp street, Beach street to Harrison avenue	763 32
Lamson street, Sumner to Maverick street	1,642 90
Leverett street, Charles street to the bridge	2,221 76
Lewis street, Moon to North street	491 87
Lincoln street, Main street to Rutherford avenue	3,716 64
Lincoln street, Dorchester avenue to Adams street,	416 52
Linden street, Commonwealth avenue to Cambridge street	2,227 49
Linden Park street, Tremont to Roxbury street	2,635 33
Longwood avenue, Huntington avenue to Parkway,	3,748 92
Lyman street, Staniford to Leverett street	460 52
Malden street, Washington street to Harrison avenue	772 89
Marcella street, Washington to Highland street	5,821 53
Marginal street Boston, Revere Beach & Lynn R.R. to tidewater	1,821 26
Marlborough street, Massachusetts avenue to Charlesgate East	1,660 04
Mason street, Avery to Tremont street	1,588 05
Massachusetts avenue, Columbus avenue to Huntington avenue	29,481 32
Massachusetts avenue, across Beacon street to Harvard bridge	†189 20
Massachusetts avenue, Albany to Tremont street	4,522 20
Maverick street, London to Havre street	7,243 52
Maverick street, Frankfort street to the railroad	1,972 00
Carried forward	$659,286 36

* $553.87 paid by Boston Elevated Railway Company for work done in 1902.
† $813 paid by Boston Elevated Railway Company.

Brought forward	$659,286 36
Merrimac street (unfinished from 1902)	*93 55
Metropolitan avenue, Poplar street to Hyde Park line	1,093 81
Milford street, Tremont street to Shawmut avenue	1,601 62
Minot street, Lowell to Leverett street	6,393 25
Minot street, Neponset avenue to Adams street	2,041 35
Monson street, Temple to Sturbridge street	405 24
Moore street, Horace to Cowper street	296 64
Morris street, Marion to Putnam street	2,565 00
Morton street, Harvard to Canterbury street	6,022 99
Moulton street (unfinished from 1902)	299 23
Mystic street, Bunker Hill to Medford street	2,924 14
N street, East Third to East Second street	431 79
Nashua street, Causeway to Minot street	12,674 17
Newbury street, Hereford street to Massachusetts avenue	13,521 55
Norway street, Huntington avenue to Turner street,	1,718 11
O street, East First to East Second street	1,077 00
Oneida street, Albany street to Harrison avenue	4,870 86
Orleans street, Sumner to Maverick street	4,585 75
P street, East Sixth street to Columbia road	3,334 33
Paine street, Walk Hill to Canterbury street	1,100 22
Parker street, Bromley park to Heath street	1,921 60
Parker street, Perkins to Cambridge street	2,248 47
Parker Hill avenue, Huntington avenue to Parker Hill terrace	6,717 88
Parnell street (unfinished from 1902)	69 08
Pearl street, Bartlett to Bunker Hill street	300 54
Pemberton square	646 30
Piedmont street (unfinished from 1902)	61 80
Plymouth street, Longwood avenue to Bernier street	1,539 87
Poplar street, Metropolitan avenue to Beech street,	911 73
Porter street, Central square to Bremen street	3,191 25
Princeton street, Prescott street to Eagle square	2,178 48
Preston street, Mill to Freeport street	3,675 88
Prospect street, Lyman to South Margin street	455 62
Purchase street, Federal to Broad street	32,005 02
Putnam street, Condor to East Eagle street	2,024 83
Raleigh street, Beacon street to the river	840 70
Reading street, Kemble street to Massachusetts avenue	3,318 23
Richmond street, North to Fulton street	2,013 45
Ridgemont street, Allston Heights to Eleanor street	5,281 42
Round Hill street, Walden to Day street	1,230 42
Roxbury street (work not started)	17 50
Carried forward	$796,987 03

*$2,986.47 paid by Boston Elevated Railway Company.

Brought forward	$796,987 03
Ruggles street, Parker street to railroad bridge	14,041 91
Russell street, Pearl to Sullivan street	1,521 84
St. Alphonsus street, Smith to Tremont street	2,005 36
St. Botolph street, Irvington street to Massachusetts avenue	4,924 16
St. Cecilia street, Boylston to Belvidere street	721 22
St. Germain street, Massachusetts avenue to Dalton street	1,526 97
St. James avenue, Berkeley to Dartmouth street	2,529 78
St. Stephen street, Massachusetts avenue to Batavia street	1,161 03
School street, Walnut avenue to Byron court	110 00
Scotia street, St. Cecilia to Dalton street	728 23
Sherborn street, Beacon street to Bay State road	2,314 97
Silver street, A to B street	3,073 73
Silver street, from E street westerly	1,367 72
Smith street (work not started)	51 00
South street, Centre to Congreve street	5,763 67
South street, Kneeland to Harvard street	3,845 00
Spring street, Centre street to railroad bridge	*1,314 79
Spring street, Allen to Poplar street	618 51
Stanhope street, Trinity place 250 feet northeasterly,	2,379 10
Staniford street, Green to Merrimac street	2,652 89
Story street, G to H street	3,321 58
Sturbridge street, River to Sanford street	1,070 20
Summer street, Melcher to A street	9,272 96
Summit avenue, Commonwealth avenue to Brookline line	5,086 62
Sumner street, Orleans to Cottage street	1,357 00
Sycamore street, Poplar to Ashland street	2,188 45
Symmes street, Walter to Fairview street	3,237 36
Temple street, Vermont to Keith street	994 29
Teneau street, Water to Freeport street	13,953 33
Tennyson street (unfinished from 1902)	48 47
Thacher street, Endicott to Prince street	577 04
Tolman street, Neponset avenue to railroad	2,829 71
Train street, Mill to King street	210 51
Tremont street (unfinished from 1902)	†2,235 70
Tremont street, Camden to Northampton street	1,429 09
Traverse street, at Beverly street	137 52
Union avenue, Green to Washington street	505 48
Varney street, Wenham to Wachusett street	365 33
Vernon street, Tremont to Washington street	2,763 18
Walk Hill street, Harvard street to Mt. Hope cemetery	5,127 83
Waltham street, Harrison avenue to Washington street	964 99
Carried forward	$907,315 55

* $242.50 paid by Boston Elevated Railway Company.
† $1,614.81 paid by Boston Elevated Railway Company.

Brought forward	$907,315 55
Washington street, Foster to Tremont street	5,462 38
Washington street (unfinished work from 1902)	204 56
Washington street, Stony brook to Bussey barn	1,395 78
Water street, Chambers to Wapping street	1,834 69
Watson street, Northampton to Camden street	2,884 60
Webster avenue, Hanover to Unity street	1,010 33
Weld street, Church street to Weld farm	250 05
Weld Hill street, Hyde Park avenue to Forest Hills cemetery	1,356 53
Wenham street, Weld Hill to Walk Hill street	375 19
Westland avenue, Massachusetts avenue to Hemenway street	8,846 05
Western avenue	207 35
West Brookline street (see East Brookline street).	
West Dedham street, Shawmut avenue to Washington street	2,177 81
West Fifth street, A to C street	2,330 96
West Fourth street, E street westerly	4,008 34
West Newton street, Belvidere street to Huntington avenue (see Belvidere street).	
West Newton street, Huntington avenue to Columbus avenue	15,020 21
West Third street, A to B street	1,681 97
Wheatland avenue, Washington to Kilton street	11,252 11
White street, Monmouth to Putnam street	1,169 60
Whittier street, Columbus avenue to Tremont street,	1,431 51
Wordsworth street, Horace to Saratoga street	1,253 50
Yeoman street, Albany to Hampden street	1,274 41
Total	$972,743 48
Less amount paid out of appropriation for Paving Division	151,717 42
	$821,026 06

HIGHWAYS, MAKING OF.

Adams street, Common to Chestnut street	$464 21
Ainsley street, from Rosemont street	1,525 88
Austin street, Washington to Lawrence street	9,034 17
B street, from line of original low water to Congress street	1,354 85
Bennington street, Chelsea street to Belle Isle Inlet,	84,022 31
Bird street, Columbia road to Hancock street	2,746 01
Blanche street, Green Hill to Preston street	3,237 17
Carried forward	$102,384 60

Brought forward	$102,384 60
Blandford street, Commonwealth avenue to B. & A. R.R.	6,150 95
Bow street, Washington street to City square .	13,236 02
Bowen street, E to F street	3,703 57
Brookline avenue, Longwood avenue entrance to Back Bay Fens to Riverway . . .	8,127 59
Calder street, Blue Hill avenue to Canterbury street,	3,511 11
Canal street, Haymarket square to Causeway street,	579 45
Capen street, Evans to Fairmount street . .	5,983 97
Carter street, Cambridge to Roland street . .	192 38
Charlotte street, Blue Hill avenue to Bradshaw street	7,244 43
Centre street, widening, opposite Perkins street .	19 00
Columbia road	180,985 54
Cummington street, Blandford to Avon street .	267 99
Davenport street, Columbus avenue to Freeport street	2,520 20
Devens street, Rutherford avenue to Washington street	5,365 53
Dilworth street, Camden to Northampton street .	2,045 48
Dunreath street, to Aspen street	2,624 58
E street, Fargo to Summer street . . .	1,376 45
Elmont street, Waterlow to Faxon street . .	5,108 69
Execution of Court	155 16
Florida street, Templeton to Ashmont street .	5,634 16
Hale street, extended to South Margin street .	2,033 88
Hamblen street, Arlington avenue across George street	2,637 90
Jersey street, Brookline avenue to Audubon road .	121 25
Lindsey street, Greenbrier to Waldeck street .	8,448 72
Mead street, Russell to Bunker Hill street . .	214 25
Millet street, Talbot to Southern avenue . .	3,886 19
Morrill street, Pleasant to Bakersfield street .	323 06
Moultrie street, Allston to Washington street .	2,449 38
Oakwood street, Norfolk to Torrey street . .	633 15
Oswald street, Calumet to Hillside street . .	1,007 51
Perkins street, Centre street to Jamaicaway . .	482 97
Queensberry street, Audubon road to Audubon road,	113 75
Ritchie street, Columbus avenue to Marcella street,	10,238 31
Robinwood avenue, Centre to Hazel street . .	974 92
Roland street, B. & M. R.R. to Somerville line .	332 50
Roseclair street, Boston street to Dorchester avenue	9,214 51
Rosemont street, Adams street to Gustine avenue .	2,876 59
Rutherford avenue, Chapman to Devens street .	29,423 71
St. Margaret street, Boston to Roseclair street .	6,468 04
Seymour street, Canterbury street to Brown avenue,	3,027 14
South Huntington avenue, Heath to Centre street,	23,203 70
Carried forward	$465,328 28

Brought forward		$465,328 28
Spalding street, South street to Old Colony railroad,		2,175 81
Swallow street, N to O street		2,862 59
Swett street (now Southampton street), Massachusetts avenue to Boston street		1,320 28
Tower street, Hyde Park avenue to Forest Hills cemetery		6,947 34
Vicksburg street, East First to East Second street,		1,641 34
Walter street, Centre to South street		30,474 87
Washington street, Talbot avenue to Euclid street,		3,334 79
Washington street, Spring lane to Milk street		1,017 90
Wayland street, Howard avenue to Dacia street		1,179 18
Williams street, Washington to Call street		353 74
Public alley 12, Poplar street, next west of Chambers street		487 89
Public alley 13, rear of Poplar street		464 62
Public alley 14, rear of Poplar street		2,899 54
Public alley 15, rear of Poplar street		597 87
Public alley 102, Marshall street to Creek square,		43 71
Public alley 303, entering Pinckney street from the south		30 97
Public alley 441, Exeter to Fairfield street, between Newbury and Boylston streets		3,613 57
Public alley 502, Rutland square to Concord square, between Columbus avenue and Tremont street,		2,161 95
Public alley 503, Rutland square to Concord square, next east of Columbus avenue		1,335 16
Public alley 702, Worcester to Springfield street		43 10
Public alley 703, from Public alley 702		31 46
Public alley 804, parallel to and between Northampton and Camden streets, and between Shawmut avenue and Tremont street		3,537 44
		$531,883 40
Less amount paid out of appropriation for Laying Out and Construction of Highways, chapter 478 of Acts of 1900	$37,985 90	
Less amount paid out of appropriation for Construction of Highways already laid out	4,583 14	
Less amount paid out of appropriation for Laying Out and Construction of Highways, East Boston	51,502 39	
Less amount paid out of appropriation for Laying Out and Construction of Highways, Dorchester	57,066 11	
Carried forward	$151,137 54	$531,883 40

Brought forward . . .		$151,137 54	$531,883 40
Less amount paid out of appropriation for Laying Out and Construction of Highways, Roxbury and West Roxbury . . .		51,975 30	
		$203,112 84	
Less credit on Brackett street . . .	$53 62		
Less credit on Oak Square avenue . . .	162 00		
		215 62	
			203,328 46
			$328,554 94

LAYING OUT AND CONSTRUCTION OF HIGHWAYS, CHAPTER 478 OF THE ACTS OF 1900.

Adams street, Common to Chestnut street . .	*
Bennington street, Chelsea street to Belle Isle Inlet	*
Brookline avenue, Longwood avenue entrance to Back Bay Fens to Riverway	*
Columbia road	*
Ritchie street, Columbus avenue to Marcella street	*
Walter street, South to Centre street . . .	*
Amount included in cost for highways, making of,	†$37,985 90
	†$37,985 90

CONSTRUCTION OF HIGHWAYS ALREADY LAID OUT.

Berkeley street, Boylston street to Columbus avenue,	‡$4,506 03
Bennington street, Chelsea street to Belle Isle Inlet	*
Columbia road	*
Mead street, Russell to Bunker Hill street . .	*
Robinwood avenue, Centre to Enfield street . .	*
Walter street, Centre to South street . . .	*
	$4,506 03
Amount included in cost for Highways, making of,	4,583 14
	§$9,089 17

* Included in cost for Highways, making of.
† $20,569.74 credited to this appropriation and charged to Abolishment of Grade Crossings on account of Blue Hill avenue, Walk Hill to River street, for work done in 1902.
‡ $1,525.07 paid by Boston Elevated Railway Company.
§ $7,896.14 paid by New York, New Haven & Hartford Railroad Company.

LAYING-OUT AND CONSTRUCTION OF HIGHWAYS, EAST BOSTON.

Bennington street, Chelsea street to Belle Isle Inlet	*
Amount included in cost for Highways, making of,	$51,502 39
	$51,502 39

LAYING-OUT AND CONSTRUCTION OF HIGHWAYS, BRIGHTON.

Franklin street, Cambridge to Lincoln street	$3,229 91
	$3,229 91

LAYING-OUT AND CONSTRUCTION OF HIGHWAYS, DORCHESTER.

Ainsley street, from Rosemont street	*
Ashland street, Mill to Everdean street	$533 61
Bird street, Columbia road to Hancock street	*
Blanche street, Green Hill to Preston street	*
Calder street, Blue Hill avenue to Canterbury street	*
Capen street, Evans to Fairmount street	*
Charlotte street, Blue Hill avenue to Bradshaw street	*
Dakota street, Washington to Greenbrier street	236 10
Elmont street, Waterlow to Faxon street	*
Everdean street, Ashland to Green Hill street	332 63
Execution of Court	1,778 09
Fairfax street, Carruth to Beaumont street	160 90
Fayston street, Blue Hill avenue to Mascoma street	73 45
Florida street, Templeton to Ashmont street	*
Gibson street, Dorchester avenue to Adams street	13 20
Hamilton street, Columbia road to Mt. Everett street	14 40
Hinckley street, Pleasant to Bakersfield street	484 35
Lindsey street, Greenbrier to Waldeck street	*
Millet street, Talbot to Southern avenue	*
Moultrie street, Allston to Washington street	*
Oakwood street, Norfolk to Torrey street	*
Carried forward	$3,626 73

* Included in cost for Highways, making of.

Brought forward	$3,626 73
Roseclair street, Boston street to Dorchester avenue	*
Rosemont street, Adams street to Gustine avenue	*
St. Margaret street, Boston to Roseclair street	*
Washington street, Talbot avenue to Euclid street	*
Wayland street, Howard avenue to Dacia street	*
West Tremlett street, Washington to Whitfield street	285 34
Windermere road, Stoughton street to Cushing avenue	6 20
	$3,918 27
Amount included in cost for Highways, making of	57,066 11
	$60,984 38

LAYING-OUT AND CONSTRUCTION OF HIGHWAYS, ROXBURY AND WEST ROXBURY.

Blandford street, Commonwealth avenue to B. & A. R.R.	*
Brookline avenue, Longwood avenue entrance to Back Bay Fens to Riverway	*
Bynner street, Day to Creighton street	1,808 15
Calder street, Blue Hill avenue to Canterbury street	*
Cummington street, Blandford to Avon street	*
Davenport street, Columbus avenue to Tremont street	*
Dunreath street to Aspen street	*
Haverford street, from Cornwall street	2,292 95
Jersey street, Brookline avenue to Audubon road	*
Oswald street, Calumet to Hillside street	*
Ritchie street, Columbus avenue to Marcella street	*
Robinwood avenue, Centre to Enfield street	*
South street, Jamaica street to Arborway	9 00
South Huntington avenue, Heath to Centre street	*
Spalding street, South street to Old Colony R.R.	*
Tower street, Hyde Park avenue to Forest Hills street	*
Walk Hill street, South to Washington street	4,324 29
Walter street, South to Centre street	*
Winthrop street, Dennis street to Brook avenue	1,250 74
Carried forward	$9,685 13

* Included in cost for Highways, making of.

Brought forward	$9,685 13
Worthington street, Longwood avenue to the Fenway	585 00
Public alley 901, Hemenway street to the Fenway .	158 70
	$10,428 83
Amount included in cost for Highways, making of .	51,975 30
	$62,404 13

New Edgestones. (Not including "323" streets.)

First Setting. Linear Feet.

YEAR.	South Boston.	East Boston.	Charlestown.	Brighton.	West Roxbury.	Dorchester.	Roxbury.	City Proper.	Total.
1891	11,724	4,131	2,227	2,032	4,617	18,138	22,693	8,236	73,798
1892	9,631	11,238	2,804	9,001	9,970	36,859	25,506	9,222	114,231
1893	4,372	1,969	.....	3,981	4,795	10,587	14,979	1,118	41,801
1894	521	816	694	1,323	1,568	6,544	39,324	1,916	52,706
1895	2,097	1,146	668	4,191	8,319	15,205	17,053	2,990	51,669
1896	3,855	807	791	8,507	2,498	21,367	20,111	43,614	101,550
1897	2,311	1,691	.....	1,086	5,228	37,205	14,241	5,097	66,859
1898	1,259	918	.....	5,909	2,185	50,124	13,252	1,281	74,928
1899	308	2,715	111	439	2,265	6,818	8,134	1,410	22,200
1900	729	616	100	.....	614	9,633	8,882	1,544	22,118
1901	1,925	1,184	.....	4,627	7,936	22,574	13,942	2,480	54,668
1902	1,957	1,121	.....	688	990	10,428	3,842	2,082	21,108
1903	1,578	1,581	.....	5,838	912	10,959	10,164	4,131	35,163
Totals	42,267	29,933	7,395	47,622	51,897	256,441	212,123	85,121	732,799

New Brick Sidewalks. (Not including "323" streets.)

First Laying. Square Yards.

YEAR.	South Boston.	East Boston.	Charlestown.	Brighton.	West Roxbury.	Dorchester.	Roxbury.	City Proper.	Total.
1891.....	3,628	2,176	120	377	967	1,478	9,098	3,881	21,725
1892.....	4,484	12,847	3,451	1,068	2,905	10,462	20,231	10,423	65,871
1893.....	751	2,197	175	.....	350	2,412	5,912	964	12,761
1894.....	2,706	2,115	437	.....	834	453	11,533	1,537	19,615
1895.....	1,946	1,151	408	2,908	1,734	2,146	6,246	4,103	20,642
1896.....	2,314	681	5,361	.....	542	2,616	15,897	1,044	28,455
1897.....	13,460	16,125	14,454	2,128	1,855	2,995	21,596	17,287	89,900
1898.....	4,487	6,453	4,653	216	1,225	4,723	13,783	10,121	45,661
1899	4,084	3,503	.....	.....	1,448	2,610	8,316	5,424	25,385
1900.....	1,069	1,476	477	873	1,583	4,033	4,999	2,858	17,368
1901.....	4,617	1,142	323	100	3,825	5,613	4,920	549	21,089
1902.....	1,319	1,425	.....	288	342	2,537	1,688	190	7,789
1903.....	1,161	635	.....	.....	182	700	2,342	186	5,206
Totals....	46,026	51,926	29,859	7,958	17,792	42,778	126,561	58,567	381,467

The amount of new edgestones set and new brick sidewalks paved during the year, not including "323" streets, is as follows:

	Edgestones, Linear Feet.	Brick, Square Yards.
South Boston, Paving District No. 1.....	1,578	1,161
East Boston, Paving District No. 2.....	1,581	635
Brighton, Paving District No. 4.....	5,838	—
West Roxbury, Paving District No. 5.....	912	182
Dorchester, Paving District No. 6.....	10,959	700
Roxbury, Paving District No. 7.....	10,164	2,342
City Proper, Paving Districts Nos. 8, 9 and 10.....	4,131	186
Totals.....	35,163	5,206

Crushed Stone, Ballast and Telford.

Output of Stone from City Crushers.

	Crushed Stone. *Tons.*	Telford. *Tons.*
Centre-street crusher	32,428	—
Chestnut Hill avenue crusher	43,028	—
Codman-street crusher	42,733	229
Columbia-road crusher	68,854	6,520
Dimock-street crusher	5,103	—
Kenney-street crusher	28,782	—
Rosseter-street crusher	2,078	688
Totals	223,006	7,437

STREET OPENINGS.

Permits have been issued from this office for making openings in the public streets during the year ending January 31, 1904, as follows:

	Permits.	Feet.
American Telegraph and Telephone Company	20	138
Auxiliary Fire Alarm Company	24	2,811
Automatic Fire Alarm Company of Boston	1	725
Boston Fire Department	37	3,475
Boston Lamp Department	276	3,903
Boston Police Department	38	2,304
Boston Street Department (Sewer Division)	273	11,068
Boston Water Department	2,744	119,535
Boston and Albany Railroad Company	4	637
Boston and Maine Railroad Company	12	452
Boston Elevated Railway Company	277	170,783
Boston Low Tension Wire Association	22	2,610
Boston Gas Light Company	435	36,087
Boston Pneumatic Transit Company	34	1,860
Brookline Gas Light Company	367	98,998
Charlestown Gas and Electric Company	87	4,765
Dorchester Gas Light Company	322	45,060
East Boston Gas Light Company	161	7,084
Edison Electric Illuminating Company	1,287	72,229
Eastern Cold Storage Company	9	433
Jamaica Plain Gas Light Company	123	10,827
Lynn and Boston Railroad Company	3	200
Massachusetts Pipe Line Gas Company	3	4,240
Massachusetts Telephone and Telegraph Company,	6	387
Carried forward	6,565	600,611

STREET OPENINGS. — *Continued.*

	Permits.	Feet.
Brought forward	6,565	600,611
Metropolitan Contracting Company	12	608
Metropolitan Sewerage Commission	9	217
New England Telephone and Telegraph Company,	447	28,257
New York, New Haven and Hartford Railroad Company	1	80
Old Colony Street Railway Company	7	1,010
Postal Telegraph Cable Company	24	1,149
Roxbury Gas Light Company	352	54,434
South Boston Gas Light Company	210	21,019
Simpson Brothers Corporation	60	4,487
Standard Oil Company	8	90
United States Sub-treasury	1	6
Union Freight Railway Company	5	670
Western Union Telegraph Company	15	1,196
Warren Brothers Corporation	58	20,333
West India Company	1	100
Miscellaneous	3,059	319,649
Emergency Permits, Class A	1,538	—
Emergency Permits returned as used, 1,290, estimated length in feet	—	7,746
Totals	12,372	1,061,662

Making a total length of openings of about 201 miles.

Permits other than for street openings have been granted as follows:

	Permits.
Advertising by man wearing hat and coat lettered	4
Cleaning snow from roofs	271
Dumping snow in public alleys	60
Driving cattle	19
Erecting, removing and repairing awnings	3,868
Erecting and repairing buildings	7,492
Feeding horses on the streets	689
Moving buildings	20
Loading and unloading goods	131
Pedlers (two classes)	886
Painting signs or notices on obstruction fences	10
Placing signs flat on buildings	2,695
Raising and lowering safes, machinery, etc.	639
Selling from areas	34
Selling from doors and windows	73
Selling fruit, etc., from stands on sidewalks	485
Special permits for July 4 and other holidays	208
Special permits for various purposes	129
Extension of permits	525
Emergency permits (class B)	365
Projecting lamps and signs	92
Total	18,705
Total number of permits for street openings	12,372
Total number of permits for other purposes	18,705
Grand total of permits issued	31,077

BONDS.

All bonds now in use (excepting those of corporations) are guaranteed by some one of the surety companies authorized to do business in the State of Massachusetts.

There are in force at this date 1,208 such bonds, and 63 corporation bonds. There have been 1,035 cancelled during the year.

NOTICES.

There have been 16,937 notices sent to the various foremen during the year, directing them to repair defects in the public streets which had been reported by the police, inspectors and others; also 5,733 notices to departments, corporations and private parties to repair the streets where they had received permits for excavations, and the work of resurfacing had been improperly done, and to owners of estates where coal-holes or sidewalk lights were defective.

Five hundred and forty-five notices have been sent to departments and corporations at the request of the chief engineer and foremen of the Paving Division, calling for various changes on account of street improvements. In each case permits have been granted allowing them to do the work.

Four thousand nine hundred and fourteen notices have been sent to departments, corporations and owners of abutting estates on streets where improvements were about to be made.

INSPECTORS.

Inspectors are now located at the various paving yards, with the exception of those required in the office for emergency work. They report each day by mail to the Permit office, and notices are sent on their complaints to the proper parties, directing repairs to be made, and each inspector is expected to see that these complaints are given proper attention.

There have been other inspectors detailed to serve with, and at the expense of, the various corporations excavating in the streets, who make a written report daily and weekly on blanks prepared for the purpose.

EMERGENCY PERMITS.

These permits have been a source of annoyance for many years, but the change in methods adopted during the year have shown good results, and a marked improvement over

preceding years. An absolute knowledge of every opening made is not obtained, as permits occasionally get into the hands of unreliable foremen or laborers who loose them, but much better information is received than ever before.

The table below shows permits given to, and returned by, each company:

	Permits Issued.	Returned.	Not Returned.
Edison Electric Illuminating Company	240	220	20
Water Department	252	210	42
Water Department (Income Division)	188	143	45
Brookline Gas Light Company	144	130	14
Jamaica Plain Gas Light Company	81	80	1
Boston Gas Light Company	138	122	16
Charlestown Gas Light Company	51	37	14
Roxbury Gas Light Company	195	174	21
Dorchester Gas Light Company	84	75	9
South Boston Gas Light Company	15	15	—
Boston Pneumatic Transit Company	9	3	6
Boston & Maine Railroad	6	1	5
New England Telephone and Telegraph Company	12	9	3
New York, New Haven & Hartford Railroad Company	33	13	20
Donovan & Co. (Police and Fire)	9	3	6
Boston Elevated Railway Company	27	13	14
East Boston Gas Light Company	36	33	3
Massachusetts Pipe Line Gas Company	18	9	9
Total	1,538	1,290	248

This shows a decided improvement in the returns. At the close of business last year there were 650 not returned, against 248 this year. Last year the most of those missing could not be accounted for, but this year nearly all of those not returned are in the possession of the departments or corporations to which they were granted.

ELECTRIC POLES.

By order of the Board of Aldermen, or at the request of the Wire Commissioner, there have been permits granted for the erection of 636 new, and for the resetting of 770 old, and for the removal of 368, poles.

STREET NUMBERING.

DISTRICT.	Whole Streets Renumbered.	Parts of Streets Numbered.	Estates Numbered.	Numbers Changed.	Metallic Figures Supplied.
East Boston	–	47	121	3	227
Charlestown	–	24	69	5	141
City Proper	1	79	228	28	527
South Boston	–	73	191	12	398
Dorchester	–	197	437	6	926
Roxbury	1	117	249	24	568
West Roxbury	3	121	213	36	442
Brighton	–	71	129	–	317
Totals	5	729	1,637	114	3,546

We have much trouble in renumbering streets which were numbered many years ago and have outgrown the conditions of those times. After making arrangements, and notifying abutters on said streets of the proposed renumbering, the department is besieged with petitions from the residents against the change.

The matter is abandoned only to come up again at some future time.

I have in mind at this time India street, on which we have done all that can be done without renumbering, and still there are requests for numbering new buildings, with protests from old-established concerns on that street, and I would respectfully suggest that a notice be sent to said occupants of buildings on such streets that on some stated time, say January 1, 1905, we shall proceed to renumber certain streets, thereby giving them time to make such changes in their business paper and cards as will become necessary.

PROPERTY IN CHARGE OF THE DEPUTY SUPERINTENDENT OF PAVING DIVISION.

Buildings and wharf on Albany street, opposite Sharon street. The building is of brick and wood, and covers some 8,000 square feet of land, and is divided into a shed for storage, blacksmith's and carpenter's shops, tool-room, and stable. The total contents of the lot, including wharf and buildings, are 63,180 square feet.

Fort Hill wharf, containing 21,054 square feet, placed in charge of the Paving Department May 18, 1874, to be used for the landing and storage of paving blocks and gravel until such time as said wharf shall be wanted for the extension of Oliver street. The greater part of said wharf is occupied by the Sanitary Division as a garbage dump, and the building thereon is leased to a tenant.

Ledge lot on Washington street, corner Dimock street, Roxbury, containing 134,671 square feet. Upon this lot are buildings containing a steam-engine and stone-crusher.

Highland street stable lot. Upon this lot is a large brick stable, erected in 1873, and occupied by the Sanitary and Paving Divisions; also a brick building used as a blacksmith's shop, and a shed for the storage of tools, etc.

Ledge lot on Codman street, Dorchester, containing 299,000 square feet, was purchased in 1870. Upon this lot is a shed containing a steam-engine and stone-crusher, also a stable and tool-house.

On the Almshouse lot, Hancock street, Dorchester, there are two stables, also a shed and tool-house.

Ledge lot on Magnolia street and Bird place, Dorchester, containing 81,068 square feet. This lot was purchased by the town of Dorchester in 1867.

Downer avenue lot, Dorchester, containing 35,300 square feet.

On Child street, West Roxbury, a lot of land containing 43,024 square feet, upon which are a stable and shed, blacksmith's shop, and tool-house.

Gravel lot in the town of Milton, on Brush Hill road, containing 64,523 square feet, leased May 13, 1843, by the town of Dorchester for 999 years; also lot of land adjoining, containing about 30,000 square feet, owned by the City of Boston.

Gravel lot on Morton street, Ward 23, containing about one-third of an acre, purchased by the town of West Roxbury in 1870, used for storage purposes.

Ledge and gravel lot, rear of Union street, containing about 37,000 square feet, purchased by the town of Brighton. This lot is at present leased.

Ledge lot on Chestnut Hill avenue, Brighton, containing about thirteen acres, upon which are an office, engine-house, stable, and crusher plant.

On Medford street, Charlestown, a wharf lot, foot of Elm street, containing 8,000 feet, upon which are sheds, office, stable, etc.

In South Boston, corner of H street and Columbia road, stable, carriage-house, shed, tool-house, and office on leased land.

On Hereford street, a yard with shed, tool-house, and office.

Wharf known as Atkin's wharf, 521 Commercial street, purchased in 1887 for $24,000, containing 22,553 square feet, having on it an office and stable.

On Centre street, West Roxbury, buildings containing engines, stone-crushers, tools, etc., on leased land.

On Rosseter street, Dorchester, buildings containing engines, stone-crushers, tools, etc., on leased land.

On Revere street, wharf for storing paving blocks, etc.

Wharf on Chelsea street, East Boston, containing 61,000 square feet, with buildings, purchased in 1897 for $15,000.

Wharf on East Eagle street, East Boston, known as Glendon Wharf, used jointly with Sanitary, Sewer, and Street Cleaning Divisions. Upon this lot are sheds, stable, and offices on leased land.

On Kenney street, Roxbury, buildings containing engines, stone-crushers, tools, etc., on leased land.

On Columbia road, Dorchester, buildings containing engines, stone-crushers, tools, etc., on leased land.

On Hamlin street, South Boston, lot used for storage purposes.

On Mt. Vernon street, West Roxbury, yard lot belonging to the Schoolhouse Commission, used for storage purposes.

On Massachusetts avenue, South End, lot used for storage purposes.

On Savin Hill avenue, Dorchester, crushing plant on ledge of John McMorrow.

On Heath street, Roxbury, buildings containing engines, stone-crushers, tools, etc., on leased land.

APPENDIX D.

REPORT OF THE DEPUTY SUPERINTENDENT OF THE SANITARY DIVISION.

ROOMS 917–20 TREMONT BUILDING,
BOSTON, February 1, 1904.

HON. JAMES DONOVAN,
Superintendent of Streets:

DEAR SIR, — I hereby respectfully submit the annual report of the expenditures, income, and operation of the Sanitary Division of the Street Department for the financial year ending January 31, 1904.

Respectfully submitted,

DANIEL P. SULLIVAN,
Deputy Superintendent.

FINANCIAL STATEMENT.

Amount of appropriation	$640,000 00
Transferred from Reserve Fund	11,100 87
Amount returned by City Collector	3,875 00
Total amount of appropriation	$654,975 87

The total expenditures of Sanitary Division, including work done for other divisions and departments, and paid by them	$702,515 23
Less amounts paid by other divisions and departments	51,414 36
Net cost of maintenance, Sanitary Division	$651,100 87
Amount returned to City Collector	3,875 00
	$654,975 87

TOTAL COST OF REMOVAL OF HOUSE DIRT, ASHES, WASTE, RUBBISH AND HOUSE OFFAL.

Salaries: deputy superintendent, clerks and foremen		$18,843 49
Office supplies and expenses		3,727 88
Ashes, waste and rubbish account		375,148 77
House offal account		213,077 59

CONSTRUCTION, REPAIR AND HORSESHOEING ACCOUNT.

Foreman		1,396 20
Expended for labor	$34,530 86	
Expended for stock	12,739 10	
		47,269 96
Allowed time for holidays	$39,554 84	
Medical attendance and allowed time for injured men	3,496 50	
		43,051 34
Total expenditures of the Sanitary Division for year ending January 31, 1904		$702,515 23

REVENUE RECEIVED FROM OUTSIDE DIVISIONS AND DEPARTMENTS FOR BOARD AND CARE OF HORSES, RENT, USE OF DUMPING BOATS, SHOEING, AND FOR REPAIRING VEHICLES, ETC.

Bridge Division	$522 85	
County of Suffolk	1,615 22	
Lamp Department	435 54	
Paving Division	14,559 87	
Sewer Division	6,807 70	
Street Cleaning Division	26,613 60	
Street Watering Division	859 58	
		51,414 36
		$651,100 87

INCOME.

Amounts of money deposited and bills presented to the City Collector for material sold and work performed by the Sanitary Division of the Street Department during the year ending January 31, 1904.

MONEY DEPOSITED.

From letting of scow privileges	$2,211 35

BILLS DEPOSITED.

For removal of engine ashes, manure and rents	12,572 50
	$14,783 85

Items of Expenditure and Revenue.

ITEMS.	Total Amount Expended.	Amount Paid by other Divisions.	Amount Charged to Sanitary Division.
Salaries of deputy and clerks,	$10,466 29	.....	$10,466 29
Salaries of foremen	9,773 40	.....	9,773 40
Labor, collection and disposition of house dirt and ashes,	188,831 91	$26,237 63	162,594 28
Labor, collection and disposition of waste and rubbish	44,978 53	5,002 50	39,976 03
Labor, collection and disposition of house offal	145,739 43	11,181 86	134,557 57
Labor and stock in stable and yards	45,711 05	4,683 68	41,027 37
Hired teams on ashes and offal	37,959 50	.....	37,959 50
Contracts on ashes, West Roxbury, North and South Dorchester	13,389 86	.....	13,389 86
Contracts on offal, East Boston, Brighton, West Roxbury, and Dorchester	16,791 49	.....	16,791 49
Ash and offal stock	785 43	.....	785 43
Allowed time and holidays	39,554 84	2,030 77	37,524 07
Grain	22,336 38	.....	22,336 38
Hay and straw	20,431 68	1,615 22	18,816 46
Medical attendance and allowed time on account of injured men	3,496 50	.....	3,496 50
Horses	7,235 00	.....	7,235 00
Veterinary services	4,033 37	.....	4,033 37
Use of hired horses	2,015 00	.....	2,015 00
Outside board and care of horses	3,138 47	.....	3,138 47
Outside horseshoeing, blacksmith, wheelwright, harness, and painting	3,121 66	.....	3,121 66
Labor, stock, etc., wheelwright, blacksmith, paint, harness, and horseshoeing shops	47,269 96	662 70	46,607 26
Dumping-boats, labor, stock, etc.	1,125 49	.....	1,125 49
Repairs on stables and sheds,	4,547 11	.....	4,547 11
Fuel	1,669 14	.....	1,669 14
Gas	879 23	.....	879 23
Electric light and power	1,196 83	.....	1,196 83
Printing, stationery, and office items	3,727 88	.....	3,727 88
Advertising	316 42	.....	316 42
Rents	16,386 32	.....	16,386 32
Tolls and fares	903 94	.....	903 94
Telephone	876 12	.....	876 12
Damages caused by city teams	91 48	.....	91 48
Taxes on Hecht's estate, as per lease	3,735 52	.....	3,735 52
Amount returned to City Collector	.....	.....	3,875 00
Totals	$702,515 23	$51,414 36	$654,975 87

Force Employed on House Dirt, Ashes, Waste and Rubbish.

CITY FORCE.	No.	Hired Teams.	CONTRACTOR'S TEAMS.			
			North Dorchester.	South Dorchester.	West Roxbury.	Totals.
Sub-foreman	10	.....	.....	.....	.....	10
Inspectors	17	.....	.....	.....	.....	17
Tallymen	7	.....	.....	.....	.....	7
Teamsters	143	26	6	4	2	181
Helpers	155	26	7	4	3	195
Bumpers	27	.....	.....	.....	.....	27
Totals	359	52	13	8	5	437

Amount of House Dirt and Ashes Removed (5 Years).

YEAR.	Materials.	No. of Loads of 54 cu. ft.
1899	Dirt and ashes	329,096
1900	" " "	344,682
1901	" " "	342,940
1902	" " "	313,844
1903	" " "	310,509

Force Employed on House Offal.

CITY FORCE.	Number.	Hired Teams.	CONTRACTOR'S TEAMS.				
			East Boston.	Brighton.	Dorchester.	West Roxbury.	Totals.
Sub-foremen	5	.....	.....	.....	.....	.....	5
Inspectors	7	.....	.....	.....	.....	.....	7
Teamsters	73	2	6	3	8	2	94
Helpers	73	2	7	3	15	3	103
Dumpers	4	.....	.....	.....	.....	.....	4
Totals	162	4	13	6	23	5	213

Amount of House Offal Removed (5 Years).

YEAR.	No. of Loads.
1899	59,956
1900	62,975
1901	66,758
1902	66,287
1903	64,744

Amount of Waste and Rubbish Removed (5 Years).

YEAR.	NUMBER OF LOADS.	
	Paper Cart.	Market Wagon.
1899	14,903	3,020
1900	11,452	5,494
1901	11,534	7,791
1902	10,201	8,297
1903	8,417	8,753

Number of Loads of Material Collected from January 31, 1898, to February 1, 1904.

YEAR.	Waste and Rubbish.	Ashes.	Offal.	Total Loads.
1899	19,815	329,096	59,956	408,867
1900	18,460	344,682	62,975	426,117
1901	19,325	342,940	66,758	429,023
1902	18,498	313,844	66,287	398,629
1903	17,170	310,509	64,744	392,423

Material Collected by Districts.

	South Boston.	East Boston.	Charlestown.	Brighton.	West Roxbury.	Dorchester.	Roxbury.	South End and Back Bay.	North and West Ends.	Totals.
House dirt and ashes,	23,821	18,578	17,683	12,205	12,440	27,403	62,244	70,759	65,376	310,509
Waste and rubbish...	314	.....	203	.....	.....	.....	573	8,992	7,088	17,170
House offal,	3,867	6,242	2,590	1,974	2,279	5,939	10,304	21,004	10,545	64,744
Totals...	28,002	24,820	20,476	14,179	14,719	33,342	73,121	100,755	83,009	392,423

Collected by West Roxbury Contractor	7,680	loads of ashes	
" " North Dorchester "	16,686	"	"
" " South " "	10,717	"	"
Total	35,083	"	"
Collected by East Boston Contractor	6,242	loads of offal	
" " Brighton "	1,974	"	"
" " West Roxbury "	1,370	"	"
" " Dorchester "	5,939	"	"
Totals	15,525	"	"

Final Disposition of all Waste Material by the Sanitary Division, Collected from January 31, 1903, to February 1, 1904, for this and other Divisions.

	Amount Collected.	Deposited on Low Lands.	Towed to Sea.	Plant of N. E. Sanitary Product Co.	Collected by Contractors.	Plant of City Refuse Utilization Co.	Totals.
House dirt and ashes	310,509	193,467	81,959	.....	35,083	.....	310,509
Waste and rubbish	18,011	1,291	845	.....	.....	15,875	18,011
House offal	64,744	.....	.....	49,219	15,525	.....	64,744
Street sweepings	34,342	.....	34,342	.....	.....	.....	34,342
Cesspool dirt	4,413	.....	4,413	.....	.....	.....	4,413
Totals	432,019	194,758	121,559	49,219	50,608	15,875	432,019

Number of Carts and Wagons Collecting House Dirt and Ashes, Waste, Rubbish, and Offal.

	Iron.	Wooden.	Total.
Offal wagons in use by the Sanitary Division	45	47	92
" " " Thomas Mulligan, East Boston	.....	7	7
" " " Gera F. Farnun, Jr., Brighton	.....	8	8
" " " Peter J. Allen & Co., Dorchester	.....	13	13
" " " John Krug, West Roxbury	.....	3	3
Ash carts in use by the Sanitary Division	.....	184	184
" " " John J. Moore, West Roxbury	.....	3	3
" " " Timothy Sullivan & Co., Dorchester	.....	5	5
" " " Denis D. Flynn, Dorchester	.....	6	6
Market wagons in use by the Sanitary Division	.....	17	321
Paper carts " " "	.....	31	
			48
Ash and offal sleds	.....	.....	129
Totals	.....	.....	498

Amount Expended for Collection of House Dirt, Ashes, Waste and Rubbish and House Offal, Labor, Hired Teams and Contracts, and disposition of same, deducting Foremen, Yard and Stable Labor, Stock, etc.

DISTRICTS.	Waste and Rubbish.	Ashes.	Offal.
1. South Boston	$375 00	$19,212 06	$10,999 54
2. East Boston	.....	13,907 00	9,096 00
3. Charlestown	151 00	18,751 47	8,215 90
4. Brighton	.....	9,297 20	2,694 13
5. West Roxbury	.....	7,656 48	3,600 44
6. Dorchester	.....	13,822 87	7,538 40
7. Roxbury	1,653 00	53,688 24	29,593 19
8–9. South End and Back Bay	13,454 00	82,051 61	36,270 89
10. North and West Ends	9,780 50	51,298 19	17,843 30
11. Dumping Boats	19,565 03	8,794 93	57,839 76
Totals	$44,978 53	$278,480 05	$183,691 55

Material Sold by Contract.

OBJECT.	Contractor.	Price per Year.	Bills submitted to City Collector.
Manure of horses at South and South Boston Yards	J. N. Smith	$1 00 a horse.	$105 43
Manure of horses at West and Charlestown Yards	Geo. P. Winn	1 00 a horse.	117 59
Manure of horses at Highland Yard	Joseph H. Kelly	1 00 a horse.	52 68
			$275 70

Contracts.

OBJECT.	Contractor.	Price per Month.	CONTRACTS.	
			Commence.	End.
Removal of house dirt and ashes :				
Part of West Roxbury	John J. Moore	$225 00	April 10, 1903	April 10, 1905
North Dorchester	Dennis D. Flynn	541 66	April 2, 1902	April 2, 1904
South Dorchester	Timothy Sullivan Co	358 33	March 12, 1902	March 12, 1904
Removal of house offal :				
East Boston	Thomas Mulligan	700 00	Feb. 23, 1902	Feb. 23, 1904
Brighton	Gera F. Farnum, Jr	166 66	June 10, 1903	June 1, 1905
Part of West Roxbury	John Krug	116 66	April 1, 1903	April 1, 1905
Dorchester	Peter J. Allen & Co	399 16	May 19, 1902	May 19, 1904
Lease of wharf, Atlantic avenue	Middlesex Trust	958 33⅓	March 1, 1903	March 1, 1908
Lease of wharf, Atlantic avenue	Heirs of Henry C. Snow	333 33	July 1, 1900	July 1, 1905
Disposal of house offal	New England Sanitary Product Co	4,367 00	Nov. 7, 1901	Jan. 1, 1912
Disposal of waste and rubbish	City Refuse Utilization Co	458 33	Dec. 1, 1898	Dec. 1, 1908
Removal of dead animals	N. Ward Co	No charge.	Nov. 9, 1901	Jan. 1, 1912

MAINTENANCE OF FORT HILL WHARF AND DUMPING-BOATS.

Amount Expended.

For towing by department tow-boat	$11,255 03	
For towing by hired tow-boats	1,964 00	
		$13,219 03
For repairs on wharves and boats		2,366 99
For rents	$4,000 00	
For dumping-boat stock and supplies	328 45	
For labor, messengers, crew and dumpers	10,643 61	
For holidays and allowed time, injured men	701 56	
		15,673 62
		$31,259 64

Number of trips to sea by department tow-boats	257
Number of trips to sea by hired boats,	35
	292

COST PER LOAD, INCLUDING RENTS, ETC., OF TOWING TO SEA, WASTE MATERIAL, BELONGING TO THIS AND OTHER DIVISIONS.

The number of loads waste material carried to sea,	121,559
The cost per cart load	25 cents.
The cost per boat load	$107

DIVISION CONSTRUCTION, REPAIR AND HORSESHOEING SHOPS.

An extensive plant is located at the South Yard, 650 Albany street, opposite East Newton street, where the construction of and repairs on street and other department carriages, carts, wagons, etc., are made, together with the painting of the same. Harnesses are repaired and many are manufactured, horseshoeing done, and all street signs are painted for the Paving Division.

For work done and materials furnished for outside divisions and departments, the different shops received as follows:

Wheelwright	$4,527 75	
Blacksmith shop, South End	7,272 00	
Blacksmith shop, West End	682 47	
Paint shop	4,658 50	
Harness shop	2,951 33	
Horseshoeing shop, South End	1,739 25	
Horseshoeing shop, West End	1,428 75	
		$23,260 05

For work done and material furnished for the Sanitary Division, the following amounts were expended by the different shops:

Wheelwright	$5,224 72	
Blacksmith shop, South End	4,733 23	
Blacksmith shop, West End	1,016 97	
Paint shop	4,412 22	
Harness shop	6,495 05	
Horseshoeing shop, South End	2,783 18	
Horseshoeing shop, West End	241 60	
		24,906 97
Total amount paid out, stock and labor, all divisions and departments		$48,167 02
Foreman in charge	$1,396 20	
Allowed time	4,185 31	
		5,581 51
		$53,748 53

Cost of Horseshoeing.

	Division Shops.	Outside Shops.
Stock	$2,238 36	$2,697 00
Labor	3,954 42	
	$6,192 78	$2,697 00

Horseshoeing for Divisions.

KIND AND STYLE.	Sanitary Division.	Street Cleaning Division.	Sewer Division.	Paving Division.	Street Watering Division.	County of Suffolk.	Lamp Department.	Totals.
New shoes	7,086	2,954	1,118	303	2	162	40	11,665
Bar shoes	63	21	61	.....	.....	.....	.....	145
Leather	2,710	1,224	531	135	.....	74	8	4,682
Resets	990	657	118	19	.....	25	1	1,810
Pads	262	53	6	14	.....	13	10	358
Springs	7	.....	2	.....	.....	.....	.....	9

Average cost per shoe, 39 cents.

DETAILED ACCOUNT OF AMOUNT PAID FOR WORK DONE BY THE SANITARY DIVISION FOR OTHER DIVISIONS OF THE STREET DEPARTMENT AND OTHER DEPARTMENTS.

For repair and construction work	$20,047 60
For horseshoeing	3,168 00
For use of dumping boats	9,969 00
For hay, grain, straw, board and care of horses	4.411 36
For feeders, watchman, and stablemen	1,488 30
For fuel, light, and telephone	635 88
For board and care of sick horses at Veterinary hospital	1,163 00
For rent for use of Litchfield's Wharf	5,200 00
For labor removing snow	1,092 75
For new horses	3,998 40
For miscellaneous items	240 07
	$51,414 36

LAND AND BUILDINGS IN CHARGE OF THE SANITARY DIVISION.

South Boston Stable. (Leased.)

Stables and sheds, with accommodations for nineteen horses, located at 317 and 319 First street, South Boston.

East Boston Stable. (Leased.)

Stable and shed, with accommodations for fifteen horses, located at 324 East Eagle street, and occupied jointly by Paving, Sewer, Street Cleaning, and Sanitary Divisions.

Charlestown Stable.

There are accommodations for twenty-five horses, situated on Rutherford avenue; lot contains 17,300 square feet of land; stable built in 1875, cost $5,083.07; sheds and outbuildings built in 1879.

Brighton.

Accommodation is provided by the Sewer Division at its stable on Western avenue for five horses of the Sanitary Division.

Highland Stable.

There are accommodations for seventy-two horses on the old Almshouse lot, Highland street, containing 81,082 square feet. A part of this stable and adjoining lot is used by the Paving Division. There is on this lot a brick stable, built in 1878, which cost $88,594.13. On this lot is an offal-shed, erected in 1875, at a cost of $1,160.12. This offal-shed, was abandoned on April 1, 1897, and in 1900 part of it was remodeled, and is now used as a carriage-house and wash-room.

South City Stables, Shops and Sheds.

Situated on Albany street, opposite Newton street. The lot belonged to the city before being used for this purpose, and contains 90,780 square feet of land.

The stables and buildings connected therewith are of brick. There are also on the premises five wooden sheds, used for storing wagons, etc. The stable is two stories high, with French roof, and has accommodations for one hundred horses. Twenty-three horses are kept in sheds. Total original cost, exclusive of land, $79,089.23. In 1899 a Veterinary hospital was built and equipped for the purpose of caring for sick and disabled horses.

Connected with stables are blacksmith, wheelwright, paint and harnessmaker's shops, in which wagons, carts, harnesses, etc., used by this and other departments, are constructed and kept in repair, also a horseshoeing shop, in which the horses of the department located in this section of the city are shod.

West Stables and Sheds.

The stable is a brick building, a story and a half high, 128 feet by 50 feet, located on North Grove street; built in 1860, without buildings attached to same. It has accommodations for 90 horses in stables and sheds. The lot contains about

45,152 square feet. On May 11, 1896, a horseshoeing shop was established for the purpose of shoeing horses of the department stabled in this section of the city.

Fort Hill Wharf.

Containing 21,054 square feet, placed in charge of the Sanitary Division; used as a dumping station for the city's garbage and refuse, and as a mooring place for dumping-boats and scows, which convey this material to sea and to the plant of the New England Sanitary Product Company. Cost of constructing platform and dredging dock, $6,219.33. There are three Barney dumping-boats which are in continual use, and are towed to sea by the department tugboat "Cormorant."

A portion of this wharf is used by the Street Cleaning Division as a locker for patrol push-carts, etc., and a part is in use by the Paving Division.

Packard's Wharf. (Leased.)

Situated at 464 Atlantic avenue; used as a berth for dumping-boats in connection with Fort Hill wharf. Leased from the widow and heirs of Henry C. Snow.

Litchfield's Wharf. (Leased.)

Situated at 466 to 470 Atlantic avenue, containing about 35,460 square feet. Leased from Jacob H. Hecht, March 1, 1898, for a period of ten years. This wharf adjoins Fort Hill wharf, and is occupied in part by the New England Sanitary Product Company as a berth for their scows, and also by the buildings of the City Refuse Utilization Company for the disposal of waste and rubbish. This property is now owned by the Middlesex Trust.

APPENDIX E.

REPORT OF THE DEPUTY SUPERINTENDENT OF THE SEWER DIVISION.

30 TREMONT STREET, BOSTON, February 1, 1904

MR. JAMES DONOVAN,

Superintendent of Streets:

DEAR SIR, — I respectfully submit report of the expenditures, income and operation of the Sewer Division for the financial year ending January 31, 1904, together with recommendations as to future development of the sewer system.

The work of the Sewer Division is as follows:

The preparation of the plans for sewerage works, the construction and maintenance of all drainage works, including the investigation of complaints in regard to defective drainage, the granting of permits for sewer connections, and the preparation of plans for the assessment of the cost of construction; also the examination of the plans of other corporations proposing to construct works in public streets, with reference to their probable interference with sewerage works, and approval of lines and grades of private streets with reference to the requirements of this division.

In the last annual report a draft of a bill, Chapter 383, was quoted, being a bill introduced on petition of His Honor the Mayor to provide funds for the work of converting existing sewer systems in the South Metropolitan District from combined to separate sewers, and for building necessary branches of the Metropolitan high level sewer to collect and convey the sewage to this sewer. This act was passed, and under it the department has done a large amount of work during the past year — 8,912 feet of high level intercepting sewers have been contracted for and a considerable amount of work done in the conversion of the existing system. The sewer systems of the Talbot avenue and Lauriat avenue districts have been largely changed to a separate system, and, in addition, surface drains have been built in many other portions of the South Metropolitan District.

During the past year the question of the changes in the sewer system of Boston incidental to the building of the Charles River Dam have come up for consideration. According to the Charles River Basin Act, it is obligatory upon the Commission to build a marginal conduit on the Boston side to convey the overflow of mingled sewage and surface water from the old outlets of the Boston system to a point below the dam, in order to insure the purity of the water of the proposed Charles River Basin. In studying this question, it seemed to the officials of the Sewer Division that this arrangement would be one of doubtful utility for two reasons — first, this conduit would be a difficult and expensive affair to maintain in a clean and sanitary condition, and if not so maintained would constitute in itself a serious nuisance all along the Charles River water front, and, secondly, there was a liability of creating a serious nuisance in the water of the harbor immediately below the dam where the river, being cut off by the dam, would have no tidal flow, and is obstructed by thousands of piles which support the railroad bridges.

It appeared that a much more efficient provision for safeguarding the basin would be effected by changing the combined systems of the Back Bay and West End into separate systems, whereby the most offensive material, that is, sewage proper, would be conveyed directly at all times to Boston's main intercepting sewer and thence to Moon Island without being mingled with floods of storm water, and by them carried over into the basin. Such a change of sewer systems would also be highly beneficial to the Back Bay, because of the fact that the sewer system in this flat territory operates under very disadvantageous conditions, its gradients being extremely flat, and as the general levels of the cellars are close to, and in some cases below, high tide levels, there is constant danger of flooding when the sewers are filled up by rain water during the period of high tide. If the cellars and premises could be connected directly with the sanitary sewers of a separate system, which in their turn were connected directly with the main drain, they would have the benefit of the pumping plant at Calf Pasture, and this liability of flooding would be avoided. The matter was presented to His Honor the Mayor, and his Honor took the position that if this work of conversion of the sewers was a desirable and almost necessary change, it would be better to undertake it at the present time instead of building the marginal conduit, and although it would cost more he was willing to advocate it, provided the city could be relieved of bearing its share of

the expense of building the aforesaid marginal conduit. The proposition was made to the Charles River Basin Commission, and upon the petition of His Honor the Mayor the following bill was presented to the Legislature:

AN ACT RELATIVE TO THE CHARLES RIVER BASIN.

Be it enacted, etc., as follows:

SECTION 1. Acts of nineteen hundred and three, chapter four hundred and sixty-five, is hereby amended by striking out section five and inserting in place thereof the following:

SECT. 5. The commission, before the completion of the dam, shall construct a marginal conduit on the north side of the basin from the outlet of the overflow channel in Binney street to a point below the dam, the conduit to be used to receive and conduct below the dam the overflow from sewers and surface drainage and other refuse matter which would otherwise pass into the basin.

SECT. 2. Said act is further amended by striking out in section ten all after the word "streets," in the thirteenth line, and inserting in place thereof the following: Such officer or officers shall construct conduits for Stony brook between Green street and Forest Hills and between the westerly side of Elmwood street and the Fens, and shall reconstruct its sewerage system so that no sewage will empty into Charles river above said dam; and to meet the expenses incurred for said conduits and the reconstruction of its sewerage system the city treasurer of said city shall from time to time on the request of the mayor issue and sell bonds of the city to an amount not exceeding five hundred thousand dollars in any one year, and the bonds so issued shall not be reckoned in determining the legal indebtedness of the city.

SECT. 3. This act shall take effect upon its passage.

The Commission, however, at the date of this writing, have not definitely indicated what their policy is to be in regard to this proposition.

A general statement of the most important work done by the division during the year, accompanied by recommendations as to the work required in the immediate future, is given in the succeeding pages, and is classified according to districts.

SOUTH BOSTON.

There have been constructed in this district, during the past year, 908.17 linear feet of brick sewer, 524.60 linear feet of wooden sewer, 5,863.24 linear feet of pipe sewer, 969.88 linear feet of brick surface drain, 5,861.61 linear feet of pipe surface drain, and 290 linear feet of house drain, making a total of 14,417.50 linear feet, or 2.73 miles.

The principal works completed are:

Columbia road, between New York, New Haven & Hartford Railroad and Q street. Work was carried on throughout the entire year, and this portion can now be said to be completed and ready for street surfacing — with the exception of that part between Board of Survey street 1,746 and Preble street, where a small part of the outlet in Old Colony avenue remains unfinished.

L-street outlet. This outlet, which takes the storm water from about 40 acres in the vicinity of Broadway, K street, L street, and East First street, was finished this year.

Sewers have been built in Covington street, F street, between First and Second streets, and Q street, between East Broadway and East Third street. Swallow street has been built under the Act 323.

Work has been started in D street for the relief of the surrounding estates, which have been frequently flooded. Extensive operations have also been begun in Dorchester street, on account of the widening.

RECOMMENDATIONS.

A street, between West First and Congress street. This is an old wooden and brick sewer which has been broken down in several places, during the past year, cutting off the flow from the large warehouse district in the vicinity of A street and Congress street, resulting in considerable damage. Temporary repairs have been made, from time to time, but an extensive system of new sewers and drains is essential before the sanitary conditions can be called satisfactory.

H-street outlet. This outlet should be extended to deeper water and stone-wing walls built to protect the same.

K-street outlet should be extended to deeper water and a system of wing-walls constructed as proposed for the H-street outlet.

N-street outlet. This outlet should be cleaned out from its mouth to the northerly line of Columbia road, as it rapidly fills up with sand from the adjoining beach.

Vale-street outlet will probably be completed the coming year, and, upon the completion of the sewer system in Columbia avenue and Kemp street, will allow us to abandon the Vinton-street overflow.

Athens street, between D and F streets. This is a small wood and slate affair, about half-filled with smudge, which is irremovable and emits a very bad odor.

Broadway, between D and E streets. This sewer should be built at a lower grade and larger size to give adequate drainage to the neighboring cellars.

East Boston.

Thirteen thousand nine hundred and fifty-six linear feet of brick and pipe sewers and surface drains were built during the year. All of this work was in Bennington-street Boulevard, except surface drains for Leyden and Gladstone streets.

Recommendations.

During the year 1904, it is important that the East Boston low level sewer be built. This will afford an outlet for all of Bennington street east of Saratoga street, and will advance the development of the low lying section of Breed's Island adjacent to and west of Belle Isle inlet. It is of great importance that this work be begun as soon as possible.

The Moore-street branch intercepter should be started to relieve as soon as possible the nuisance existing during the warm weather at the foot of Moore street, when the sewer empties out on to the flats and produces a stench at every low tide.

Charlestown.

Two thousand nine hundred and seventy-four linear feet of brick, pipe and concrete sewers and outlets were built in this district.

The most important work was the rebuilding of a part of the Rutherford-avenue outlet of an adequate size for all future needs. This was 6 feet by 7 feet concrete and steel and brick structure.

Also the construction of sewers in Hamblen street and Arlington avenue, which completed the connection of the Beacham-street district, so called, with the Metropolitan sewer.

Sewerage works were built in Rutherford avenue, Devens and Bow streets, under chapter 323 of the Acts of 1891, etc.

Recommendations.

Aside from the Rutherford avenue sewer, between outlet and Middlesex street, which needs rebuilding, there are only small jobs to consider in this district. If all these were built which are desirable in order to relieve the flooding of cellars and similar troubles, it would amount to changing the

sewerage system of the low lying parts from a combined to a separate system. This will undoubtedly be finally done, but the change can be brought about gradually.

BRIGHTON.

Nine thousand six hundred and fifty-seven linear feet of pipe sewer and surface drain were built and 690 feet of brick conduit.

The most important of this was the Faneuil Valley Brook outlet in private land, between North Beacon street and Charles River, passing under the high railroad embankment. This was 12 feet circular brick and 12 feet 8 inches by 11 feet brick. The surface drains built turned the drainage system of quite a large area about Bigelow hill from a combined to a distinctly separate system.

RECOMMENDATIONS.

The work for which there is the greatest demand for the coming year is the building of Shepard Brook conduit, from Faneuil Valley Brook at North Beacon street, near Wool pond, to Shannon street. The estimated cost for this is about $91,500.

WEST ROXBURY.

Thirty-four thousand six hundred and sixty linear feet of brick, concrete and pipe sewers and surface drains were built during 1903.

The most important was the 8-foot circular concrete conduit for Roslindale branch of Stony Brook, between Washington and Cohasset streets, and the rebuilding of a 4-foot circular brick conduit in Washington street to Kittredge street; also the building of house sewers in a large territory in the vicinity of Washington and Beech streets and Colberg avenue, and about 12,600 linear feet of surface drains principally in streets which drain into the Roslindale main sewer. These will tend to relieve the sewer of storm water with which it is overcrowded at every rainfall.

RECOMMENDATIONS.

Hyde Park avenue and Belgrade avenue are ordered laid out and constructed under chapter 323 of the Acts of 1891. These streets must have complete sewerage systems, except that part of Hyde Park avenue between Larch place and point near Patten street. This part of the street will even-

tually be drained by the West Roxbury low level sewer, and at present outlets can be obtained only for surface drains.

The conduit for Roslindale branch of Stony Brook should be built between Cohasset and Linden streets and the brook improved with permanent culverts under streets, and walled channels in other places from Linden street to Belgrade avenue. The estimated cost of this is about $60,000.

The Florence street branch of Roslindale brook should be built from the Roslindale brook to Poplar street. There is great necessity for this conduit to provide an outlet for surface water and relieve property flooded in heavy rains. Estimated cost is $140,000.

Talbot avenue high level sewer, between Canterbury and Morton streets. The first section of this has begun and the remainder should be pushed through to completion during 1904.

Sewers are badly needed in Addington street, between Metropolitan sewer in Weld street and Dunbar street, and also in the adjacent streets. Petitions have been received for these sewers for the past two or three years, and relief from present extremely unsanitary conditions are badly needed.

NORTH DORCHESTER.

There have been built in this district during the past year, 6,064.61 linear feet of pipe sewer, 1,950.07 linear feet of brick surface drain, 32,431.18 linear feet of pipe surface drain, and 1,249 linear feet of house drain, making a total of 41,694.86 linear feet, or 7.90 miles.

The principal works completed are:

Freeport street brook, between tide-water and Pleasant street, the outlet for which was completed this year, and which also includes changes in the sewer system of Dorchester avenue and flattening of sections of the intercepting sewer.

Crescent avenue brook, between the New York, New Haven & Hartford Railroad and Carson street. A small portion of 6 foot 6 inch circular brick outlet has been completed.

Willow court and outlet in private land, which was recommended in last year's report, has been finished.

The separation of the storm water in the high level area was the most important work in Dorchester the past year, both in respect to length and advantages secured. These latter include the draining of the Talbot avenue area, embracing the following streets, viz.:

Harvard street, between Blue Hill avenue and Esmond street. In this street the sewer was rebuilt at a lower grade; also a large brick surface drain, some 500 feet in length, to take the lateral drains from Abbot, Wales and Esmond streets, which in turn drain the adjacent streets.

Other streets in this district in which the separation of the system was accomplished are Algonquin, Athelwold, Bradshaw, Bicknell, Bradlee, Chamberlain, Erie, Elmo, Fowler, Glenway, Glenarm, Gleason and Gaylord streets, Michigan avenue, Merlin street, Millett, Nottingham, McLellan, Page, Park, Seaver, Spencer, School, Thane and Wolcott streets; also Warner and Washington streets, between Erie and Bowdoin streets.

Sewers have been constructed in Claybourne street, Buttonwood court, Elder street extension, Geneva avenue, Levant and Tebroc streets.

Private parties have constructed sewers in Downer street, Greeley, Greenwood and Brenton streets, Wellington road and Lombard way.

Elmont street, Greenhalge street, Roseclair street, and part of Columbia road, between Buttonwood street and the New York, New Haven & Hartford Railroad, have been built "under the Act."

Surface drains have been constructed in Clapp street, Elton street and Grampian way.

RECOMMENDATIONS.

Franklin field conduit. This should be extended up to Blue Hill avenue, to take the flow of the old watercourse which now meanders through private land and constitutes a source of much annoyance to the abutters.

Tenean Creek, between Westville street and Homes avenue. This is made necessary by the large amount of surface water which is brought down from Hamilton street, Draper street and other streets in this vicinity which have no storm water outlet, consequently overflowing into private land and causing not a little damage to the abutting property.

Normandy street. This street will be taken care of during the coming year, as contract has been let for building the necessary sewer and surface drains.

Tonawanda-street surface drain. This drain should be lowered from a point in Tonawanda street across private land, Lindsey street and Stratford street to Park street. This drain was built by private parties and takes the storm water from a considerable area, but was laid with poor joints

and has become nearly filled with sand. When rebuilt it should be laid at a lower grade.

Faxon-street surface drain. A drain should be built from a point opposite Faxon street, on the line of the Oakland Garden fork of Canterbury branch of Stony brook, through Faxon street to Washington street, to take the storm water from Kilton street, Millet street and other streets in this low country, which are flooded after nearly every heavy rain.

Dorchester brook sewer. A start should be made the coming year on the separation of the system in the area drained by the Dorchester brook sewer, as the district through which this sewer flows has been built up so rapidly in the past few years that the main trunk sewer is utterly inadequate to take the drainage flow.

Coleman-street brook, in private land, between Freeport-street brook and Quincy street. A surface drain is needed to take the old brook course.

There should also be built a surface drain in East Cottage street, between Norfolk avenue and the New York, New Haven & Hartford Railroad bridge; also the Crescent-avenue surface drain should be extended from its present end to Pond street.

A surface drain should likewise be constructed in Standish street, between Park and Harvard streets, to connect with the Talbot-avenue surface drain, completed last year.

SOUTH DORCHESTER.

There have been built in this district during the past year 15,050.69 linear feet of pipe sewers, 1,490.34 linear feet of brick surface drains, and 25,272.76 linear feet of pipe surface drains, making a total of 41,813.79 linear feet, or 7.92 miles.

Attached to this report you will find a list of streets, with lengths and sizes of sewers constructed in the same. Many pipe sewers, which were repeatedly called for in petitions, were built, and some of the most important of these follow:

Cedar street, between River and Manchester streets, thereby doing away with a great many cesspools, which were a constant menace to this district.

Chickatawbut street, between Neponset avenue and Glide street, which was petitioned for many times.

Oakland street, between River and Rockdale streets, thereby affording an outlet for sewers in Rockdale street and Rosewood street, which were also built.

A start was made on the rebuilding of the Coffey street sewer, between Neponset avenue and Newhall street, from which we have had numerous complaints in the past.

The sewers in Mattapan street and Tileston avenue were completed, thereby affording drainage to a large amount of property.

The sewers in Washington street and Rockwell street were completed, this work having been asked for many times in the past.

The sewer system for the relief of the district known as "Vose's Grove" has been started and, in all probability, will be completed during the coming year.

In regard to the building of surface drains outside of chapter 383 of the Acts of 1903, the completion of Davenport brook, between Van Winkle and Bailey streets was effected. This channel will greatly relieve the sewers in this vicinity, and the flooding of cellars during and after rains will be abated. An open ditch for the relief of the above brook below Adams street was also finished.

On the Oakland brook at Mattapan the extension of the covered channel for a distance of about 336 feet was finished; also an open ditch to the New York, New Haven & Hartford Railroad.

In private land, between Templeton street and Ashmont street, a 24-inch pipe surface drain was built, thereby abating a long-standing nuisance and providing a suitable outlet for catch-basins and catch-basin drains in Adams street, between Ashmont street and Oak avenue.

Under chapter 383 of the Acts of 1903, contracts for two sections of the Dorchester high level sewer, from the Hyde Park line to Freemont street, were let and will be completed during the coming year.

We have also started the separation of the system in South Dorchester under the foregoing act, some 22,000 linear feet of pipe and brick surface drains having been laid during the past year.

RECOMMENDATIONS.

The most important work contemplated in this district during the coming year should be the extension of the work already let on the Dorchester high level sewer through Dorchester Lower Mills, Ashmont, Meeting House Hill, and terminating at the crossing of Blue Hill avenue and Moreland street, Roxbury.

The proposed Canterbury branch high level sewer, which has already been started in West Roxbury, should receive

our early attention and some definite route should be decided upon as soon as possible. This sewer will do away with the Callender and Lyons streets pumping station, afford an outlet for Morton street and vicinity, and also provide an outlet for the rebuilding of the Talbot avenue sewer at a lower and more satisfactory grade.

The next more important work in the district should be the improvement of the several brook courses, from which we are constantly receiving complaints. The first of these to receive our attention should be the Canterbury branch of Stony brook, between Callender and Harvard streets. This is a much-needed improvement and has been a source of great trouble to the Sewer Division.

The Oakland-brook channel should be extended from the end of the present covered channel to the Neponset river; also the portion between the New York, New Haven & Hartford Railroad and Bismarck street should be built, as these sections have been repeatedly asked for by property owners in the vicinity.

On the Davenport-brook channel, the portion between Adams street and Van Winkle street is in a very unsatisfactory condition. The portion in land of the Boston Elevated Railway Company and Armandine street should receive our earliest attention, as we are constantly receiving petitions and threatened with suits on account of floodings from the same.

By building these main channels we will provide suitable outlets for the separation of the system, in which the work of this division will be centred during the coming year.

NORTH ROXBURY.

There have been built in this district during the past year 1,932.44 linear feet of brick sewer, 7,196.14 linear feet of pipe sewer, 2,055.95 linear feet of brick surface drain, 30,314.41 linear feet of pipe surface drain, and 3,379.08 linear feet of 8-inch and 6-inch pipe house drains — making a total of 44,878.02 linear feet, or 8.5 miles.

The principal sewerage works completed in the district are:

Fisher avenue, between Parker and Hayden streets; Halleck street; Smith street surface drain; sewers and surface drains have also been constructed in Jersey street, Queensberry street, Cummington street, Longwood avenue, Bellevue street, Huntington avenue, Hillside street, Parker Hill avenue, Ward street, Astor street, and also in streets of the Smith street district.

RECOMMENDATIONS.

Jersey street. The sewer system in this street is practically completed, but cannot be finished until the width of the sidewalks is determined.

Queensberry street. The sewer system in this street is practically completed, but cannot be finished until the width of the sidewalks is determined.

Huntington avenue, from Tremont street to Wait street. This surface drain should be built to relieve the siphon at Calumet street. Every heavy rain causes the street to be flooded.

Vila street district. Nothing has been done to remove the surface water from these sewers. This work will have to be done in the near future.

Fenway lands, surface drains still discharge on to private property.

Muddy river conduit, nothing has been done to the old conduit in Brookline avenue. This matter has been discussed in previous reports.

Francis street, across Muddy river. This matter has been discussed in previous reports and should be attended to, although there is not the danger of flooding that there used to be, as many surface drains have been built in the district, taking surface water from the sewers; but while roof water is connected with the sewers there is still some danger of flooding the cellars in the lower part of the district.

SOUTH ROXBURY.

There have been built in this district during the past year, 720.35 linear feet of brick sewer, 1,930.90 linear feet pipe sewer, 455.52 linear feet brick surface drain, 10,677.41 linear feet pipe surface drain, and 430 linear feet house drain, making a total of 14,214.18 linear feet, or 2.69 miles.

The principal works completed in the district are as follows:

Warren street, between Moreland street and Rockville park. This sewer was rebuilt at a larger size and greater depth to accommodate houses in this neighborhood, the sewage from which had been raised by pumps owned by private parties.

Warren street, between Brunswick and Intervale streets. This was a small 15-inch pipe sewer on the line of the Dorchester brook sewer and connected a 2 foot by 3 foot brick sewer near Intervale street with a 2 foot by 2 foot 6

inch brick sewer near Brunswick street. In time of storm it was the cause of the backing up of the entire system of sewers in the vicinity of Waumbeck, Crawford and Howland streets. This sewer was replaced by a 2 foot 6 inch by 3 foot 9 inch brick sewer, which will tend to relieve this section.

Cedar street, between Columbus avenue and Centre street. An auxiliary sewer has been built in this street to relieve the flooding which occurred in times of heavy storms. This sewer takes the water from a partial system of surface drains in the vicinity and delivers it to the Stony brook channel in Columbus avenue.

Sewers have been built in Copeland street, Fort avenue, Pickering avenue and Station street; while Davenport street and Dunreath street have been constructed "under the Act."

A start was made on the surface drain in Fenner street, which will ultimately be the outlet for the surface drainage system in what is known as the Ruthven street area.

The most extensive work has been that of the separation of the storm water in the Metropolitan high level area. On completion of this system the cause of many complaints of flooding will be removed.

The following is a list of streets in which this work has been done:

Abbotsford street, Harold street, Homestead street, Humboldt avenue, Ruthven street, Wabeno and Wabon streets, Wyoming street, Hollander street and Hutchings street, which would be considered in the Ruthven street area; also Gaston street, Gannett street, Holborn street, Otisfield street and Rockland avenue, which would be considered part of the Crawford street area; also Cobden street.

A start has also been made in Hampshire street, between Whittier and Ruggles streets, which is intended to relieve the low territory known as the Ruggles street district.

RECOMMENDATIONS.

Ruggles street district. The Ruggles street sewer, being the main outlet for the entire Bower and Sherman streets drainage area, is overtaxed in time of storm to such an extent that flooding of cellars is a common occurrence along the line of this street and adjacent streets, such as Warwick street, Haskins street, Westminster street, Auburn street and Shawmut avenue. The separate system should be established in this district during the coming year to provide relief for a very considerable number of complainants.

Hammond street district. It would be worse than useless to furnish any half-way measures of relief for this territory, and the separate system is urgently needed for Hammond street, Sussex street, Greenwich street, Winsor street, Arnold street, Ball street and that portion of Shawmut avenue tributary to Hammond street.

Elmwood street overflow. This is needed as a relief for the overcrowded trunk sewer which flows through this street and overflows into the Stony brook.

Willow park, between Westminster street and Shawmut avenue. This sewer, having been built on soft ground, has settled so much that the house drains are nearly all disconnected from the main sewer and the cellars are flooded during rains to such an extent that many of these buildings are rendered untenantable. Nothing can be done in this street, however, until a satisfactory sewer has been constructed in Ruggles street.

CITY PROPER.

There have been built in this district during the past year 390.22 linear feet of brick sewer, 4,177.34 linear feet of pipe sewer, 1,214.61 linear feet of pipe surface drain, 378 linear feet 8-inch and 6-inch pipe house drain, making a total of 6,160.17 linear feet, or 1.17 miles.

The principal sewerage works completed in the district are as follows:

South street, from Kneeland street to Beach street; Tyler street, between Kneeland and Beach streets; North street, between Blackstone and North Centre streets; Albion street, Village street, from Dover street to Compton street; and Court street, between Washington and Tremont streets, which has been rebuilt by the Transit Commission.

RECOMMENDATIONS.

State street. The Canal-street relief sewer in Commercial street, which was settled by the Transit Commission, has not been rebuilt, and as the street has probably settled all that it will, the work can now be done.

Beverly-street overflow. This matter has been mentioned in previous reports, but nothing has been done.

Carleton street. Sewers are so shallow and their grades so flat in this district that many cases of flooding have occurred. The trouble comes from the low elevation of the surface of the streets, and from sewers that are at the upper end, and consequently the highest part of the system. To lower the outlets of the district or build a deep sewer from

the intercepting sewer in Camden street, as was once proposed, will cost so much that nothing has been done.

When the sewers in the Hereford-street district are put on the separate system, a deep sewer from the intercepting sewer in Dalton street will be constructed through Norway street and Cumberland street nearly to the New York, New Haven & Hartford Railroad. When this work is done there will be a deep sewer within 220 feet of Carleton street, which can be extended through the Carleton-street district.

Buckingham street. The problem of draining this street is similar to that of draining Carleton street. When the deep sewer near Carleton street, above referred to, is built, it can be extended to Buckingham street, giving the street a sewer which will be deep enough.

MAIN DRAINAGE WORKS.

These works include the main and intercepting sewers, Calf Pasture pumping station, Moon Island reservoir and outfall sewer, Lyons-street pumping station, and the care of the Stony brook channels.

MAIN AND INTERCEPTING SEWER.

The following tables show the amount of building, repairing, and cleaning of all tide-gates, sumps, overflows, and regulators of the city sewerage system, connecting with the metropolitan system, main drainage works, and Stony brook; also the city intercepting sewers.

Number of regulators, gates, sumps, and overflows to be cared for:

	Gates.	Regulators.	Sumps.	Overflows.
Brighton	50	16	17	27
Charlestown	24	9	11	12
East Boston	36	15	16	20
City Proper	117	14	37	65
Dorchester	43	2	10	17
South Boston	39	4	15	17
Roxbury	29	1	8	11
Total	338	61	114	169

The length of main and intercepting sewers in the city is twenty-one miles.

The following is an account of the work done during the past year:

Sewers cleaned	3¼ miles.
New tide-gates built	22
" sumps built	3
" overflows built	13
Vapor-gates built	9
Regulators repaired	59
Tide-gates repaired	293
Flushing gates repaired	14
Manholes repaired	235
Sumps repaired	62
Manhole steps put in	483
Old tide-gates replaced by new	62
Loads of sewage matter removed from tide gates, sumps and regulators	4,234
Total length of Stony Brook water-course to be cared for and inspected after each storm	6¼ miles.
Loads of material removed from the channel	3,423

PUMPING STATION, CALF PASTURE.

The following repairs and alterations were made during the year:

Battery of three boilers of 185 pounds steam pressure installed and put in operation.

North side gate in filth hoist replaced by new one, dimensions, 7 feet by 6½ feet.

New cylinder on No. 1 engine.

New cylinder on Davidson feed pump.

Extensive repairs made on sludge tank.

Tar and gravel roof on coal shed renewed.

Coal run replanked and repaired.

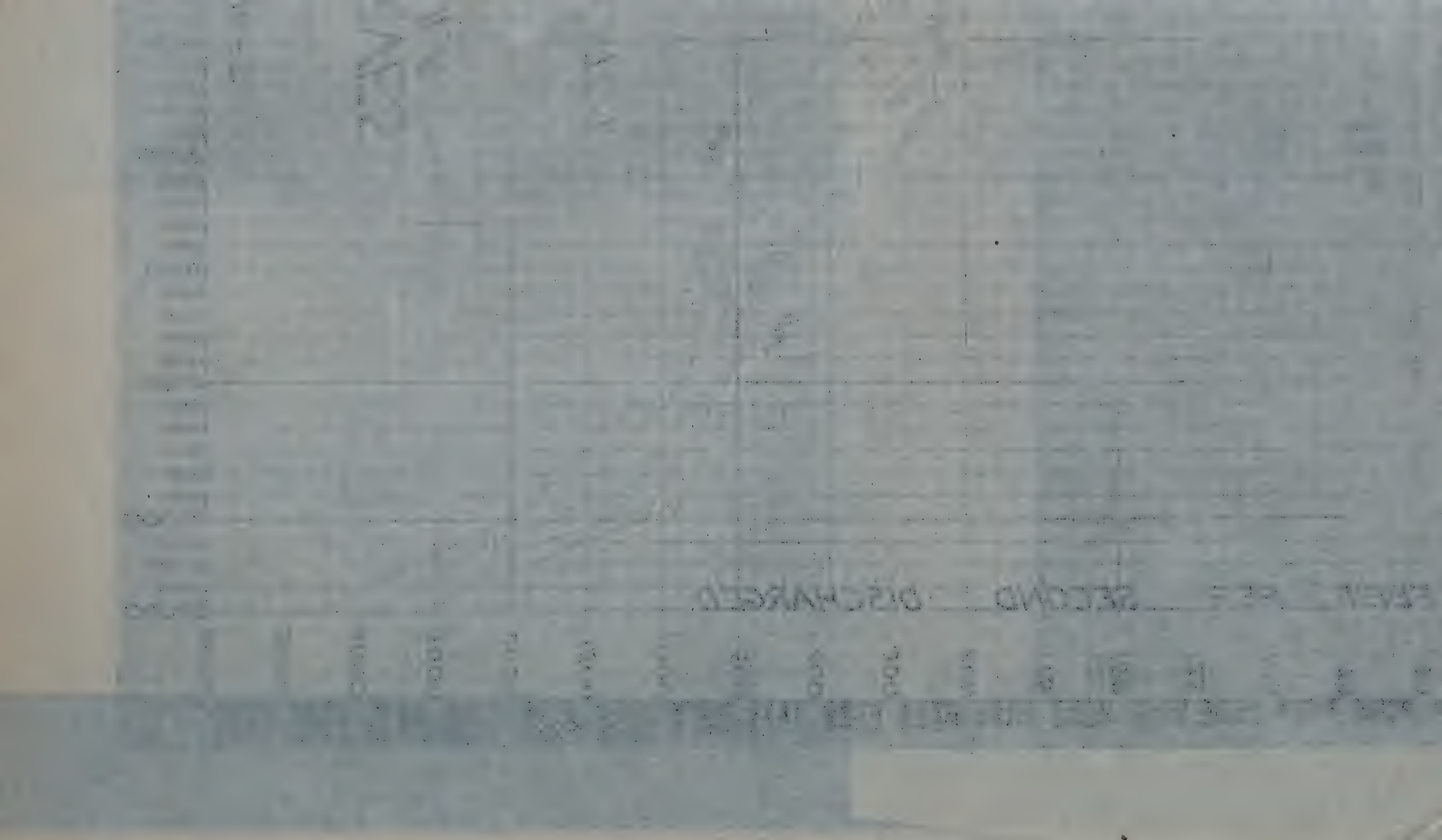
Pier for out-board bearing of crank shaft of new No. 5 pumping engine built.

Extension of engine-house completed, containing offices, machine shop, carpenter shop, stock-room, and lavatories. This extension completes the main building at the pumping station on the lines of the original design.

RECOMMENDATIONS.

The following will be necessary on or before the going into commission of the new No. 5 pump:

New electric plant.



New gallery gates connecting galleries with pump wells, ten in number.

12-inch water main to station. The old 6-inch main in use at the present time will be insufficient to furnish water for the pumping station and the Bay State Gas Works when the new pump is in operation.

Two new 48-inch force mains connecting No. 5 pump with the pipe chamber at westerly end of deposit sewers.

The following are also urgently needed :

Electric lights on the road from railroad to pumping station.

Electricity needed for lighting can be furnished by the new electric plant.

The road from the railroad to the pumping station should be macadamized and new fences built.

LYONS-STREET PUMPING STATION.

Lyons-street pumping station has been operated in a very satisfactory manner. Nothing has been required but a few minor repairs.

MOON ISLAND.

The gates are being repaired and renewed throughout the entire main gate-house, as fast as conditions will admit. Some portions are being replaced by iron and some by composition. The life of these metals under the conditions existing here has been very clearly demonstrated, and the economical value of each defined.

The removal of an upper gate, with all of the bolts, frame and guides, is both a difficult and expensive matter. No provision whatever was made to shut off any water or bulkhead the opening, and it is with much danger and difficulty that this work is done. The early or late discharge of the basins, the large flow of sewage, the bad odor and gas caused by the churning of the sewage, and the unbearable conditions there during the summer months, make this work progress slowly.

The bolts around the wheel of the turbine have been renewed and other repairs made.

Repairs have been made on steam piping, steam and hot water traps and pump, placing all in good condition.

Repairs have been made on the bottom of two divisions of the reservoir, and some pointing done in six-foot gallery and around the outlet.

The gates at the outlet gate-house and the mechanism for operating the same have been renewed. This gate is under

a considerable head most of the time, and is subjected to hard usage. In renewing it was made extra strong and heavy.

Some repairs have been made on the roadway and embankments, and they are now in good order.

The iron fence around the reservoir has been painted, also some of the buildings.

Repairs have been made on the house and barn at Squantum, and on a portion of the wooden fence on the road from the island to Squantum.

RECOMMENDATIONS.

Some of the additions and repairs necessary the coming year are as follows:

A gasoline hoisting engine to assist in raising the outfall gates when necessary.

New iron stairways or steps to get in or out of the divisions of the reservoirs.

A new line of water-pipe, to carry water to wash off the walls in gallery and basins, for cleaning purposes.

Finishing the building of the fences on embankment to Squantum, and around the connection chamber; and also the building of gates at entrance to grounds and the property of the City of Boston at Squantum.

There is considerable pointing necessary on the old walls of reservoir, on the bottom of No. 4 basin, on the outlet sewers, on the sea wall to Moon Island, and on the building at outlet.

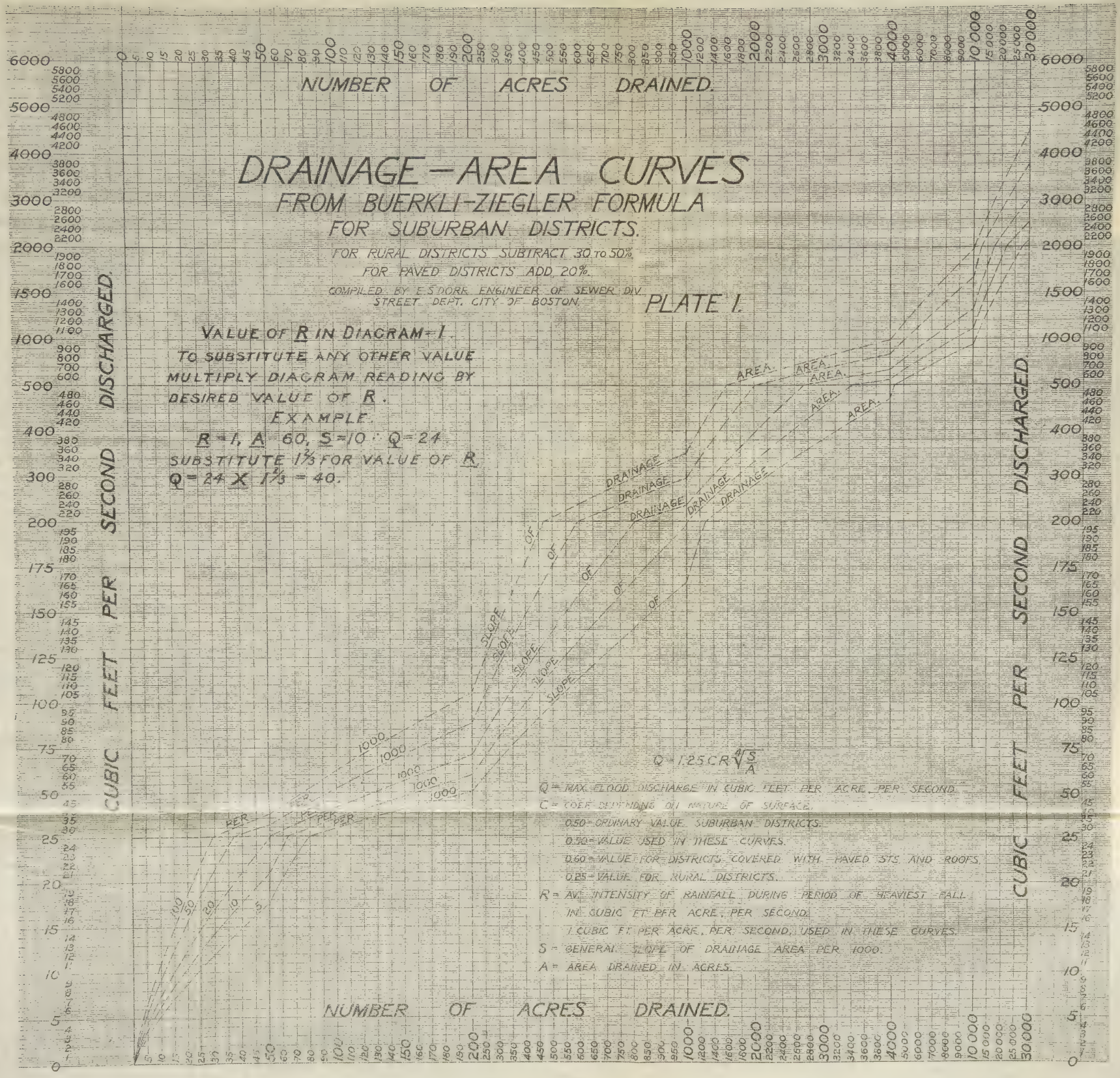
A little pointing is also necessary on the basin side of long gate-house.

A new shaft in the turbine well is needed, and also a shaft to the gate around the turbine.

The rip-rap around the island is somewhat disturbed and should be relaid, and attention given to places where there is a wash around the footing course.

STONY BROOK.

The construction on the 15¾ by 20-foot conduit, with the 2 by 3½ feet West Roxbury low level sewer in connection, continued to about 90 feet south of the south line of Green street, parallel with the old brook course. This work was discontinued on March 21, 1903, through lack of appropriation. A flume now diverts the flow from the open channel into the completed conduit at a point about 25 feet south of Green street.


NUMBER OF ACRES DRAINED.
DRAINAGE—AREA CURVES
FROM BUERKLI-ZIEGLER FORMULA
FOR SUBURBAN DISTRICTS.
FOR RURAL DISTRICTS SUBTRACT 30 to 50%
FOR PAVED DISTRICTS ADD 20%.
COMPILED BY E.S.DORE ENGINEER OF SEWER DIV. STREET DEPT. CITY OF BOSTON.
PLATE I.
VALUE OF R IN DIAGRAM=1.
TO SUBSTITUTE ANY OTHER VALUE MULTIPLY DIAGRAM READING BY DESIRED VALUE OF R.
EXAMPLE.
R=1, A 60, S=10 ∴ Q=24
SUBSTITUTE 1⅔ FOR VALUE OF R.
Q=24 X 1⅔ = 40.
AREA.
DRAINAGE
SLOPE
1000
CUBIC FEET PER SECOND DISCHARGED.
$Q = 1.25 C R \sqrt[4]{\frac{S}{A}}$
Q = MAX. FLOOD DISCHARGE IN CUBIC FEET PER ACRE PER SECOND.
C = COEF. DEPENDING ON NATURE OF SURFACE.
0.50 = ORDINARY VALUE SUBURBAN DISTRICTS.
0.50 = VALUE USED IN THESE CURVES.
0.60 = VALUE FOR DISTRICTS COVERED WITH PAVED STS AND ROOFS.
0.25 = VALUE FOR RURAL DISTRICTS.
R = AV. INTENSITY OF RAINFALL DURING PERIOD OF GREATEST FALL IN CUBIC FT PER ACRE PER SECOND.
1 CUBIC FT PER ACRE, PER SECOND, USED IN THESE CURVES.
S = GENERAL SLOPE OF DRAINAGE AREA PER 1000.
A = AREA DRAINED IN ACRES.

This conduit should be continued as soon as possible to Forest Hills. The old channel, especially in the most thickly populated part of its course, in the vicinity of Green street, is a constant menace to the health of the people living about there. It is found necessary to clean the bed of the brook quite frequently, otherwise the conditions would become unbearable. All preliminary surveys, plans, etc., for the continuance of this work are completed.

The necessity for rebuilding the channel extending from the old gate-house to Elmwood street is only too apparent; its dangerous condition has been referred to in many previous reports.

A section of the old double channel in Downing street, near the new Cabot street bath-house, has been replaced by a 6 by 8-foot brick conduit. A 12-inch pipe was laid on both sides of this conduit to provide for sewerage. In Whittier street a 15-inch pipe was replaced. This constitutes the entire work performed in this locality.

The plan proposed to eliminate the pollution in the Fens Pond is being carried out. Borings, surveys and plans from Huntington avenue to the Charles River were completed and a line settled upon. Excavation started September 21, 1903. A concrete conduit 13 feet 6 inches by 26 feet 4 inches connects the Commissioners' channel at Huntington avenue with the proposed gate-house, and is about half finished. Two brick conduits, one 12 by 12 feet and the other a 7-foot circular shape adjoining, are being built to serve as foul flow channels for the Commissioners' channel and the old channel of Stony Brook, respectively, and to extend from the location of the proposed gate-house to Charles River.

The following is the amount of work done between February 1, 1903, and February 1, 1904:

48	linear	feet	15¾	by	20	foot	brick	conduit, Jamaica Plain.
102	"	"	36	"	38	"	"	sewer, Green street.
48	"	"	24	"	42	"	"	"
120	"	"	6	"	8	"	"	conduit, Downing street.
24	"	"	stone reducers.					
20	"	"	12-inch iron pipe, Downing street.					
356	"	"	12	"	pipe sewers, Whittier street.			
125	"	"	15	"	"	"	"	"
714	"	"	7 by 12 foot brick conduit, Fenway.					
301	"	"	13 foot 6 inch by 26 foot 4 inch concrete conduit, Fenway.					

ENTRANCE FEES, PERMITS AND ASSESSMENTS.

Entrance fees to the amount of $4,337.18 have been collected from estates upon which no sewer assessment was

ever paid, in accordance with chapter 38, section 10, of the Revised Ordinances of 1898.

Bills for sewer assessments, amounting to $784.66, have been deposited for collection, representing those estates assessed under chapter 456 of the Acts of 1889, and amendments thereto, which have been connected during the year with the sewers for which they were assessed.

One thousand five hundred and eighty-four (1,584) permits have been issued to licensed drain-layers to make connections with the public sewers, and the work done under these permits has been inspected, and a record of the same made on the plans of this division, in accordance with the provisions of chapter 38, sections 6 and 10, of the Revised Ordinances of 1898.

Nine hundred and twelve (912) permits have been issued to district foremen and contractors for construction and repairs of sewers and catch-basins.

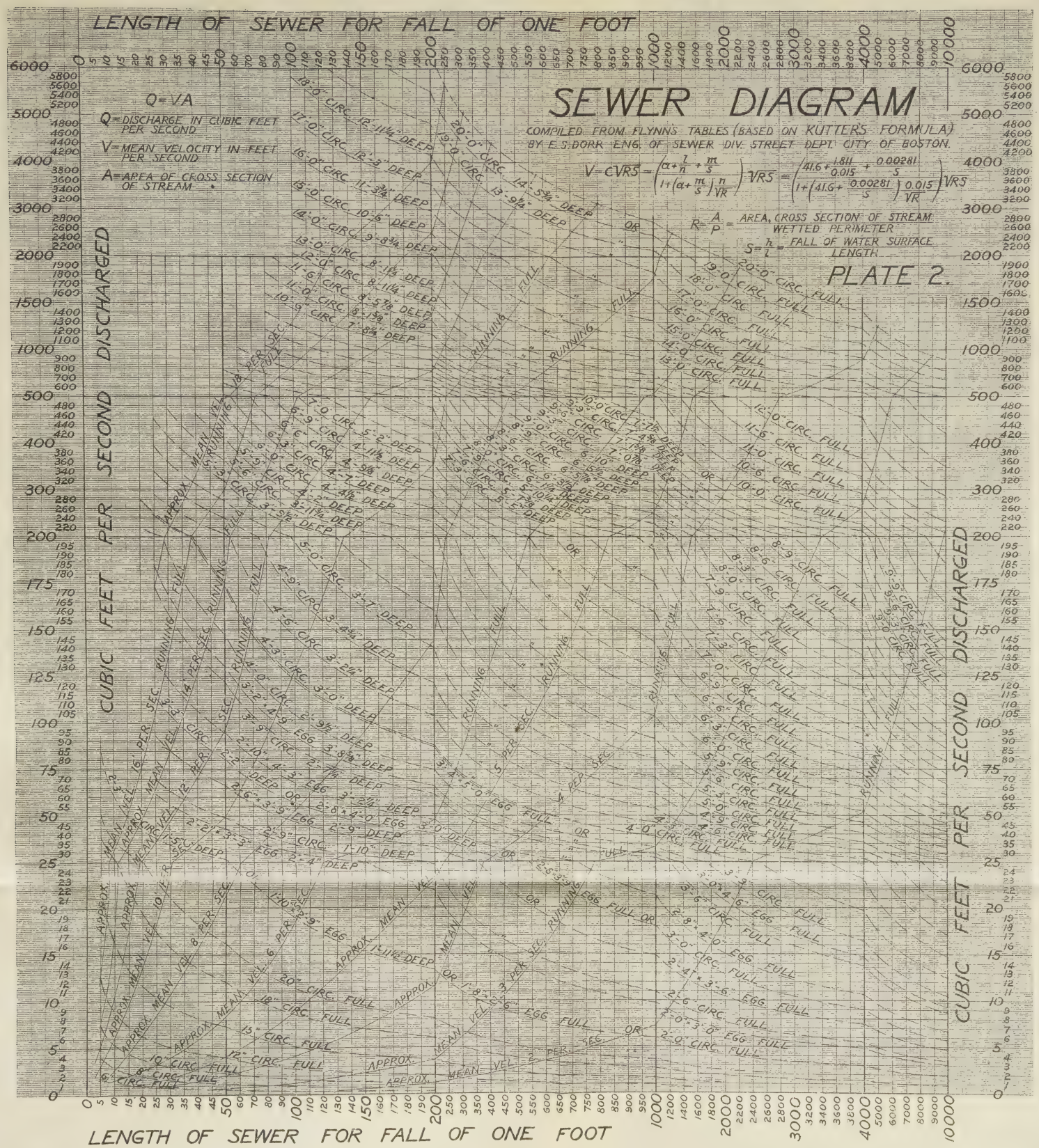
Plans for the assessment of estates benefited by sewer construction have been furnished the Street Commissioners, representing 144,602 feet of sewers and appurtenances, costing $667,367.

Respectfully,

GEORGE PHILLIPS,
Deputy Superintendent.

Catch-basins built February 1, 1903, to January 31, 1904.

	Number.	
City Proper	50	952,893 linear feet of sewers flushed.
Roxbury	111	4,089 cubic yards material removed from sewers.
Dorchester	69	
West Roxbury	23	8,482 catch-basins cleaned; 16,994 cubic yards removed.
Brighton	39	
Charlestown	19	
East Boston	38	
South Boston	141	
Total	490	


LENGTH OF SEWER FOR FALL OF ONE FOOT
SEWER DIAGRAM
COMPILED FROM FLYNN'S TABLES (BASED ON KUTTER'S FORMULA)
BY E. S. DORR ENG. OF SEWER DIV. STREET DEPT. CITY OF BOSTON.
Q = VA
Q = DISCHARGE IN CUBIC FEET PER SECOND
V = MEAN VELOCITY IN FEET PER SECOND
A = AREA OF CROSS SECTION OF STREAM
$V = CVRS = \left(\frac{\alpha + \frac{l}{n} + \frac{m}{s}}{1 + \left(\alpha + \frac{m}{s}\right)\frac{n}{VR}}\right)VRS = \left(\frac{41.6 + \frac{1.811}{0.015} + \frac{0.00281}{S}}{1 + \left(41.6 + \frac{0.00281}{S}\right)\frac{0.015}{VR}}\right)VRS$
$R = \frac{A}{P}$ = AREA, CROSS SECTION OF STREAM / WETTED PERIMETER
$S = \frac{h}{l}$ = FALL OF WATER SURFACE / LENGTH
PLATE 2.
CUBIC FEET PER SECOND DISCHARGED
LENGTH OF SEWER FOR FALL OF ONE FOOT

Report of Sludge Received in and Removed from the Deposit Sewer for Twelve Months ending January 31, 1904.

MONTH.	Received. Cubic Yards.	Removed. Cubic Yards.
1903.		
February	429	544
March	1,005	815
April	799	742
May	590	560
June	1,098	915
July	923	1,024
August	829	1,044
September	1,068	1,044
October	970	1,020
November	861	854
December	828	916
1904.		
January	761	98
Total	10,161	9,576

Balance on hand, February 1, 1904, 1,689 cubic yards.

Daily average number of gallons pumped for 1903, 88,804,669.

The sewer diagrams first published in 1902 are republished in this report, in response to requests of many engineers and employees of this department for these diagrams for use in sewer calculation.

Financial Statement. — Street Department, Sewer Division.

Appropriations.	Balances on Hand Feb. 1, 1903.	Appropriations, Loans and Transfers during the year.	Revenue Received during the year.	Total Credits.	Expenditures during the year.	Balances on Hand Jan. 30, 1904.
Street Department, Sewer Division	.....	$288,038 05	$641 21	$288,679 26	$288,679 26	
Sewerage Works	$7,320 31	1,000,000 00	1,000 00	1,008,320 31	993,424 68	$14,895 63
Separate Systems of Drainage	.....	600,000 00	.....	600,000 00	297,431 11	302,568 89
Charles River Basin	.....	800,000 00	.....	800,000 00	259,888 71	540,111 29
Construction of Highways Already Laid Out	.....	331,166 56	.....	331,166 56	210,935 43	120,231 13
Highways, Making of	.....	50,201 50	.....	50,201 50	50,201 50	
Laying Out and Construction of Highways, Chapter 478 of the Acts of 1900,	.....	92,545 89	.....	92,545 89	92,545 89	
Abolishment of Grade Crossings	.....	2,125 46	.....	2,125 46	2,125 46	
Stony Brook Damages	.....	186,106 58	.....	186,106 58	186,106 58	
Dorchester Street	.....	8,008 07	.....	8,008 07	8,008 07	
Totals	$7,320 31	$3,358,192 11	$1,641 21	$3,367,153 63	$2,389,346 69	$977,806 94

OBJECTS OF EXPENDITURES.

Pumping Station and Moon Island		$119,366 15	
Tow-boat	$23,785 44		
Less paid by Sanitary Division	11,255 03		
		12,530 41	
Main and intercepting sewers		30,499 25	
			$162,395 81
Pumping Station, Lyons Street, Dorchester.			
Maintenance			8,560 20
Stony Brook.			
Maintenance			8,005 30
Miscellaneous Maintenance Charges.			
Office and engineering force, salaries and expenses,			11,644 41
Current expenses of yards, lockers, stables, etc.		$56,407 97	
Less amount earned by department teams and engines		28,262 14	
			28,145 83
Repairing and cleaning catch-basins, sewers and general repairs			51,852 18
House connections, work for other departments, incidentals, etc.			10,983 83
Hardware, tools, rubber goods, etc.			3,094 02
Telephones not included elsewhere			1,318 29
Increase of stock at yards			2,679 39
			$288,679 26
SEWERAGE WORKS.			
Pumping Station at Moon Island			$116,298 81
Sewer Construction.			
South Boston		$56,734 08	
East Boston		11,286 75	
Charlestown		37,075 81	
Brighton		98,091 97	
West Roxbury		128,951 29	
Dorchester		187,502 67	
Roxbury		101,645 66	
City Proper		66,734 14	
			688,022 37
Miscellaneous Construction Charges.			
Office and engineering force, salaries and expenses,			73,099 01
Hardware, tools, rubber goods, and damages			24,243 50
New manholes			8,684 00
Carried forward			$910,347 69

Brought forward		$910,347 69
Sundries		17,862 15
Stony Brook improvement (construction and engineering)		65,214 84
		$993,424 68

SEPARATE SYSTEMS OF DRAINAGE.

Sewer Construction.

East Boston	$2,361 31	
Brighton	17,714 51	
West Roxbury	24,715 19	
Dorchester	135,840 83	
Roxbury	83,143 26	
		$263,775 10
Miscellaneous charges, engineers' salaries, sundries, and expenses		23,656 01
		$297,431 11

CHARLES RIVER BASIN.

Sewer Construction.

Foul flow channel, Stony Brook	$240,057 41
Miscellaneous charges, engineers' salaries, expenses, and sundries	19,831 30
	$259,888 71

CONSTRUCTION OF HIGHWAYS ALREADY LAID OUT.

Sewer Construction.

South Boston	$70,020 32	
East Boston	62,023 96	
Charlestown	1,791 31	
West Roxbury	279 83	
Roxbury	59,375 94	
City Proper	6,848 04	
		$200,339 40
Miscellaneous charges		10,596 03
		$210,935 43

HIGHWAYS, MAKING OF.

Sewer Construction.

South Boston	$2,662 03	
Charlestown	4,865 60	
West Roxbury	3,154 37	
Dorchester	9,756 94	
Roxbury	6,591 89	
City Proper	11,354 92	
		$38,385 75
Miscellaneous charges		11,815 75
		$50,201 50

Summary of Sewer Construction for the Twelve Months Ending January 31, 1904.

District	Built by the City by Contract or Day Labor.	Built by Private Parties.	Total Length Built During the Twelve Months Ending Jan. 31, 1904.
	lin. ft.	lin. ft.	lin. ft.
City Proper	6,857.88	1,031.29	7,889.17
East Boston	13,956.85	.....	13,956.85
Charlestown	2,974.25	.....	2,974.25
South Boston	14,417.50	.....	14,417.50
Roxbury	58,280.70	1,031.50	59,312.20
West Roxbury	30,235.07	4,623.73	34,858.80
Dorchester	81,063.17	2,445.48	83,508.65
Brighton	8,882.15	774.96	9,657.11
Totals	216,667.57	9,906.96	226,574.53

Summary of Sewer Construction for Five Years Previous to February 1, 1904.

	1899.	1900.	1901.	1902.	1903.
	lin. ft.	lin. ft.	lin. ft.	lin. ft.	lin. ft.
Built by the City by Contract or Day Labor,	99,772.15	78,255.92	122,092.52	120,871.32	216,667.57
Built by Private Parties	17,955.05	15,438.28	14,004.67	9,922.02	9,906.96
Totals	117,727.20	93,694.20	136,097.19	130,793.34	226,574.53

Schedule of Sewers Built to Date in the City of Boston, February 1, 1904.

District.	Total Length Built During Twelve Months Ending Jan. 31, 1904.	Length Rebuilt and Abandoned During the Twelve Months Ending Jan. 31, 1904.	Additional Length for the Twelve Months Ending Jan. 31, 1904.	Miles.
	lin. ft.	lin. ft.	lin. ft.	
City Proper	7,889.17	1,618.00	6,271.17	1.19
East Boston	13,956.85	.....	13,956.85	2.64
Charlestown	2,974.25	941.15	2,033.10	0.39
South Boston	14,417.50	1,710.10	12,707.40	2.41
Roxbury	59,312.20	2,952.55	56,359.65	10.67
West Roxbury	34,858.80	146.85	34,711.95	6.57
Dorchester	83,508.65	1,185.37	82,323.28	15.59
Brighton	9,657.11	.....	9,657.11	1.83
Totals	226,574.53	8,554.02	218,020.51	41.29
Length built previous to January 31, 1903				573.99
Total				615.28
Length of Intercepting Sewer				24.12
Total				639.40
Total Mileage of Streets Containing Sewerage Works				439.38

LAYING OUT AND CONSTRUCTION OF HIGHWAYS.

Chapter 478 of the Acts 1900.

Sewer Construction.

East Boston	$16,867 36	
South Boston	29,384 46	
Charlestown	930 88	
West Roxbury	135 98	
Dorchester	78 00	
Roxbury	30,776 78	
City Proper	6,368 66	
		$84,542 12
Miscellaneous charges		8,003 77
		$92,545 89

ABOLISHMENT OF GRADE CROSSINGS.

Sewer Construction.

South Boston	$196 58
Dorchester	1,928 88
	$2,125 46

Stony Brook Damages.

Damages to Boston Belting Co.	$186,106 58

Dorchester Street.

Sewer construction	$8,008 07

RECAPITULATION.

Street Department, Sewer Division	$288,679 26
Sewerage Works	993,424 68
Construction of Highways Already Laid Out	210,935 43
Highways, Making Of	50,201 50
Separate Systems of Drainage	297,431 11
Charles River Basin	259,888 71
Laying Out and Construction of Highways, Chapter 478 of the Acts 1900	92,545 89
Abolishment of Grade Crossings	2,125 46
Stony Brook Damages	186,106 58
Dorchester street	8,008 07
	$2,389,346 69

APPENDIX F.

REPORT OF THE DEPUTY SUPERINTENDENT OF THE STREET CLEANING DIVISION.

921, 922, 923 TREMONT BUILDING,
BOSTON, February 1, 1904.

HON. JAMES DONOVAN,
Superintendent of Streets:

DEAR SIR, —I have the honor to submit the annual report of the Street Cleaning Division of this department for the year ending January 31, 1904.

SPECIAL WORK.

The work of this division has been of a routine character for recent years, and the force, it may be said, is now on a permanent basis, the men making full time the year round, independently of climatic or other conditions.

The only special work of the past year deserving particular mention is the erection of an office building in Charlestown, which is entirely adequate for the purpose.

An attempt has been made to improve the West End stable, for which provision was made in an appropriation of $5,000. The difficulty of making an old building as good as new was never more forcibly recognized than in this instance. Although fully instructed as to the object for which this appropriation was made, and after a very careful study of the premises, a firm of architects submitted plans for improvements which, if carried out to their just completion, would have involved an expenditure far in excess of the amount allotted by the City Council. This may be an argument in favor of the utter demolition of the present structure and the erection of one up to date, which, it is respectfully submitted, has been the opinion of the writer from the time he first looked into the needs of this division. It would ultimately be economy to put up a first-class stable in this district, and it is a question of time only when it must be done. The present building is a shell, more or less unsafe and entirely inadequate.

Snow.

It would be no exaggeration to include under the head of special work what follows on the subject of snow; for never has this division, not to speak of the entire department, been so heavily taxed as during the current year of snow and ice; and the worst, perhaps, is yet to come. The weather bureau, the public press, every one admits there has been more snow, more ice, more cold than has ever been known in the city's history. According to the United States Weather Bureau, about five feet of snow have fallen up to date. The first snow-fall came on November 6. The ground has been covered with snow since December 26. The temperature has been extremely low and steady.

It has been the custom in the past to tabulate the cost of this item of expense by districts. In this report, and for the future, it will show in one grand total. The figure set against it must not be considered a part of this story. It is not misleading, nevertheless, if it be remembered that the report is for the financial year ending January 31, 1904.

The sum of $37,512.44 covers the snow work of November and December of 1902 and January, 1903. If one may base an inference on the expense of the past four weeks — and all signs point to a prolonged winter — it is conservatively estimated that it will cost this division alone $65,000 before the last vestige of snow will have disappeared. No figure, or set of figures, can tell the story of snow-bound Boston during the winter of 1903.

Coal Expense.

The coal strike of 1902, which cost this division during the past year $1,206.23, shows a continued service into the present financial year at an additional expense of $421.23, making a total cost on this account $1,627.96.

Stables.

As was intimated in the last report, the South Boston stable has proved to be a source of expense to this division; and if, as it appears probable, Dorchester be made during the coming year a part of the Street Cleaning Division area to be cared for by the South Boston force, as it is now being more or less regularly done, then it would be in the line of wise progress to be on the lookout for more central and more commodious quarters.

Nothing has been done to improve the stable in Roxbury. The live and the rolling stock have suffered in consequence.

STOCK.

An improvement may be recorded in the character of the horses. Most of those that had been condemned have been disposed of. The rolling stock has been kept in fair repair and some of the carts been made as good as new. The harness stock has been added to and is in a very creditable condition.

There is much to be done, however, to make the equipment all that it should be. New carts must be purchased or made, particularly if the lines of the division be extended; and it will be necessary, also, to buy a few more sweeping machines.

PAPER LITTER.

This subject has been so thoroughly thrashed that there is little left to be said or suggested. It does seem strange that it should continue to be the serious problem of the division.

If the people, who will so indifferently throw their papers, their candy boxes, their fruit peelings into the highways, were cautioned by the police, and, if necessary, brought into the court and made to pay a fine, and all the facts judiciously exploited in the daily papers, the public would soon learn that they did these offensive things at their financial peril.

But the above are not the only or worst offenders. Much of the litter that makes the streets so unsightly comes almost directly out of the stores, the receptacles for holding the store dirt varying in size, material and offensiveness. It is not uncommon to see in front of a large establishment a hat-box, a soap-box, a dilapidated barrel, a dry goods box, all piled up with store litter of every kind. This should not be tolerated, and some means should be taken to prevent it.

PUSH CART WORK.

The importance of this work is fully recognized both by this department and the public. When it was started in March of 1891 it was considered an auxiliary feature more or less tentative, and consequently very insignificant in its equipment. The force consisted at that time of a foreman and about twenty laborers. To-day it numbers seventy-five men, consisting of a foreman, four sub-foremen, and seventy laborers. It is the only branch of the service which has grown numerically and in importance from year to year, and

there is a constant demand from the business section particularly for its further development and extension.

Public Alleys.

The fifty or more public alleys of Boston, like those that are private, may be aptly called the filth tributaries of the public streets. These alleys are a constant source of complaint, and it is exasperating to receive these complaints from the better sections of the city. Regular cleanings are demanded, and more complaints and requests have come regarding public alleys than from the ordinary streets of the entire city. The Back Bay gang cleans these alleys regularly, and will never be able to give better service until more money is allowed the division.

Dumps.

This is another of the serious problems confronting this division. It is iteration and reiteration to state that provision must be made for more dumping places. The Mill Pond in Charlestown is about filled in, and that section of the city must find a place for its sweepings either in distant Somerville, or, as was recommended in the report of last year, be taken to a scow to be located at the Charles River avenue bridge, which would also accommodate the West and the North End gangs. Steps have been taken to make such provision, and it is probable that a new scow will be carrying street sweepings from this place during the coming year.

New Districts.

There has been a persistent demand from the residents of Dorchester for a regular street cleaning force. They are not satisfied with an occasional cleaning of Dorchester avenue and its main tributaries. The conditions that obtain there now are truly rural, and the citizens cannot be blamed if they demand more urban service. An estimate has already been submitted of the cost of establishing and maintaining a small force which will care for at least the northern part of Dorchester, and it is very probable that in a month or two this section of the city will be receiving regular and satisfying service. All of Dorchester, in fact all of that section of Roxbury south of Dudley street, West Roxbury, Jamaica Plain and Brighton should be under the care of the Street Cleaning Division. Whatever street cleaning is done in these sections to-day is by the Paving Division.

It may be a question of years when Boston will have a street cleaning force that will cover the entire city. It certainly is to be wished for, and it is, in the opinion of the writer, only a question of money— more liberal appropriations and it would soon be a consummation.

Respectfully submitted,

JOSEPH J. NORTON,
Deputy Superintendent.

FINANCIAL STATEMENT.

General Appropriation.

Appropriation 1903–1904	$375,000 00
Transferred from Police Department	3,226 25
Transferred from Registry Department	669 20
Transferred from Weights and Measures Department	719 68
Transferred from Wire Department	2,944 53
Transferred from Surplus Revenue	21,066 45
Total Amount of Appropriation	$403,626 11
Total Expenditures	$403,626 11

Special Loan.

Amount appropriated for erecting Office Building in Charlestown	$3,000 00
Total Amount Expended	$3,000 00

Special Loan.

Yard for Street Cleaning Division, West End:	
Amount of Loan	$5,000 00
Amount expended	350 00
Unexpended	$4,650 00

OBJECTS OF EXPENDITURES.

Superintendence.

Salary of Superintendent	$3,000 00
Office pay-rolls	4,296 05
Stationery	406 20
Printing	1,003 13
Board of Horses, not mentioned elsewhere	266 00
Telephone service	862 05
	$9,833 43

Machine Sweeping of Paved Streets.

This includes cost of sweeping, loading and removal of street dirt.

District 1, South Boston	$15,994 26
District 2, East Boston	6,011 51
District 3, Charlestown	11,027 18
District 7, Roxbury	15,036 61
District 8, South End:	
Up-town gang	13,043 75
Down-town gang	35,068 14
District 9, Back Bay	6,033 67
District 10, West End	15,284 64
District 10, North End	15,528 79
	$133,028 55

Total length of miles cleaned, 13,125.

Cleaning Gutters.

This includes cost of sweeping, loading and removal of street dirt.

District 1, South Boston	$2,041 89
District 2, East Boston	3,102 14
District 3, Charlestown	2,496 41
District 7, Roxbury	2,211 16
District 8, South End:	
Up-town gang	3,537 56
Down-town gang	57 44
District 9, Back Bay	4,865 88
	$18,312 48

Total length of gutters cleaned, 2,637.

Cost of Maintaining Dumps.

District 1, South Boston	$445 73
District 2, East Boston	237 00
District 3, Charlestown	476 50
District 7, Roxbury	474 60
District 8, South End:	
Up-town gang	474 60
Down-town gang	500 25
District 9, Back Bay	460 43
District 10, West End	265 45
District 10, North End	224 70
	$3,559 26

Removing Snow.

This includes labor on crossings, in streets, and carting of snow. It also includes the snow work of the patrol system.

Labor and teaming	$37,512 44

Miscellaneous.

This shows the cost of such work as may not be characterized the same in all districts.

District 1, South Boston	$702 25
District 2, East Boston	73 00
District 3, Charlestown	434 11
District 7, Roxbury	983 50
District 8, South End:	
Up-town gang	1,447 35
Down-town gang	847 65
District 9, Back Bay	76 65
District 10, West End	154 40
District 10, North End	105 40
	$4,824 31

Patrolling by Districts.

This includes the cost of picking up and the removal of refuse papers, etc., from the streets.

District 1, South Boston	$1,808 70
District, 2, East Boston	689 00
District 3, Charlestown	25 04
District 7, Roxbury	73 95
District 8, South End:	
Up-town gang	448 38
Down-town gang	307 98
District 9, Back Bay	76 64
	$3,429 69

Carting Coal.

Labor and teaming	$421 73

Public Alleys.

Labor and teaming	$260 64

Push-cart Patrol System.

Superintendence, inspection, etc.	$7,136 83
Push-carts, labor, teaming, etc.	49,335 66
Paper patrolling	5,199 97
Stock	1,325 90
Miscellaneous work	3,996 43
Holidays	6,504 13
Repairs at station, 95 Columbus avenue	125 65
Sundries, repairs, etc.	2,534 76
	$76,159 33

Stable and Yard Expenses.

In the following statement is included the cost of the South End, West End, Roxbury, South Boston, Charlestown and East Boston stables:

Labor, including the cost of feeders, hostlers, broom-makers, watchmen, yardmen, messenger, hay, grain, etc.	$56,532 68
Cart and carriage repairs	5,294 94
Horseshoeing	3,899 75
Harness repairs	1,997 21
Sweeping machine repairs	2,714 55
Stable and shed repairs	1,382 09
Street car tickets	650 00
Tool repairs	246 16
Veterinary service and medicine	2,005 85
Board and care of horses not mentioned elsewhere	559 00
	$75,282 23

See Patrol System.

Stock Account.

Broom stock furnished	$5,073 89
Harnesses and horse furnishings purchased	1,433 45
Horses purchased	2,899 20
Tools purchased	1,408 66
	$10,815 20

See Patrol System.

Miscellaneous.

Holidays	$20,373 64
Scow (cost of disposal at sea of 34,099 loads of street dirt)	8,814 25
Carried forward	$29,187 89

Brought forward	$29,187 89
Sundries	1,948 59
Annuity	300 00
Office, Charlestown, in excess of amount expended under Special Loan	106 11
	$31,542 59

GENERAL RECAPITULATION OF EXPENSES.

Superintendence	$9,833 43
Machine sweeping of paved streets	133,028 55
Cleaning gutters	18,312 48
Maintaining dumps	3,559 26
Removal of snow and ice	37,512 44
Miscellaneous work	4,824 31
Paper patrolling	3,429 69
Carting coal	421 73
Cleaning public alleys	260 64
Patrol system, push-carts	76,159 33
Stable and yard expenses	75,282 23
Stock account	10,815 20
Miscellaneous	31,542 59
	$404,981 88

Of this amount, the sum of $1,355.77 was paid by other divisions and departments for work done, etc., thus making the net expenses of this division, as shown in the financial statement, $403,626.11.

INCOME.

Amount of bills deposited with the City Collector during the financial year ending January 31, 1904, $1,662.83.

Table Showing the Number of Loads of Street Dirt Removed.

DISTRICTS.	Number of loads of dirt removed.	Cost per load of cleaning streets and removing to dumps, including foreman's superintendence.
1	24,459	$0 73
2	6,436	1 41
3	9,039	1 49
7	10,434	1 65
8 Up-town gang	10,866	1 52
8 Down-town gang	17,403	2 01
9	5,007	2 17
10 West End	7,634	2 00
10 North End	8,659	1 79
Total	99,937	
		Barrels and bag loads.
Removed by push-cart patrol system	5,476	77,509
Removed by district push-carts		
Removed by paper patrol	848	31,079
Total	106,261	108,588

Total number of cart loads removed.....106,261
Total number of barrel and bag loads removed.....108,588

Thirty-four thousand and ninety-nine (34,099) loads of these street sweepings (or 32 per cent.) were delivered at the dumping scow at Fort Hill Wharf, the towing of which to sea cost twenty-five (25) cents per load.

Public Waste Barrels.

Total number of waste barrels emptied	10,043
Total number of subway barrels emptied	3,333
Total	13,376

SUMMARY.

Miles of paved streets cleaned	13,125
Miles of gutters cleaned	2,637
Loads of dirt removed	105,413
Loads of paper and refuse removed	3,600
Push-cart barrels emptied	108,588
Waste barrels emptied	10,043
Subway barrels emptied	3,333

PROPERTY OCCUPIED BY THE STREET CLEANING DIVISION.

South Boston — Lease of stable, corner of H and Second streets.

East Boston — Part of stable on East Eagle street, leased.

Charlestown — Part of stable on Rutherford avenue. City stable.

Charlestown — Office building on Rutherford avenue. City property.

Erected during the year:

Roxbury — Part of stable, Highland street. City stable.

South End — Part of stable, 650 Albany street. City stable.

West End — Part of stable, North Grove street. City stable.

Back Bay — Lease of building, 95 Columbus avenue.

APPENDIX G.

REPORT OF THE DEPUTY SUPERINTENDENT OF THE STREET WATERING DIVISION.

801–803 TREMONT BUILDING,
BOSTON, February 1, 1904.

HON. JAMES DONOVAN,
Superintendent of Streets:

DEAR SIR, — I respectfully submit the annual report of the Street Watering Division of the Street Department for the financial year ending January 31, 1904.

All public streets were watered at an expense of $164,104.74.

The season opened March 14, and continued until November 15, after which time no watering was needed. Considered as a whole the season was cool, and what might be determined wet, although somewhat dryer than 1902. For the first time the street mileage remained stationary, and the increase in expense over last year was due in part to the weather and a slight increase in the inspection force.

The Bennington-street Boulevard and the Strandway will be finished in time for watering next year, and the watering of these roads and the demand in the outlying sections for increased wettings suggest a substantial increase in the appropriation for the division. Repeated references have been made to the necessity of adequate funds to maintain the high grade efficiency of the service.

Yours respectfully,

AMBROSE WOODS,
Deputy Superintendent.

FINANCIAL STATEMENT.

Amount of appropriation	$165,000 00
Amount of expenditures	164,104 74
Balance	$895 26

OBJECT OF EXPENDITURES.

Salaries and labor	$18,932 11
Teaming	138,218 00
Water-posts, repairs, etc.	2,758 94
Board of horses	791 96
Shoeing and clipping	141 75
Veterinary services and medicine	142 83
Harness and supplies	149 50
Horses, purchase of, and hire	576 00
Vehicles, purchase of, repairs, etc.	1,081 03
Printing	186 02
Stationery and postage	106 70
Bicycles, repairs, etc.	621 30
Telephone service	115 50
General supplies	283 10
Total	$164,104 74

Objects of Expenditures, Classified by Districts, from February 1, 1903, to January 31, 1904.

DISTRICTS.	Teaming.	Labor.	Maintenance.	Totals.
South Boston	$11,364 00	$1,123 50	$970 74	$13,458 24
East Boston	7,637 50	1,123 50	679 52	9,440 52
Charlestown	6,000 00	561 75	533 90	7,095 65
Brighton	11,410 00	1,123 50	1,019 27	13,552 77
Dorchester	20,110 00	1,685 25	1,844 40	23,639 65
West Roxbury	17,870 00	1,685 25	1,553 18	21,108 43
Roxbury	24,266 50	1,685 25	1,892 94	27,844 69
Back Bay	14,015 00	1,685 25	1,019 27	16,719 52
South End	11,487 50	1,123 50	970 74	13,581 74
City Proper	14,057 50	2,247 00	1,359 03	17,663 53
Totals	$138,218 00	$14,043 75	$11,842 99	$164,104 74

Expenditures since 1899.

The expenditures since 1899, when the city assumed, for the first time, the watering of paved streets, are as follows:

1899	$174,625 97
1900	174,742 45
1901	164,259 36
1902	160,147 25
1903	164,104 74

Amount of Water used in 1903.

Capacity of two-horse cart (gallons)	600
Average loads thrown per day, per cart	26
Total gallons thrown per day, per cart	15,600
Number of cart days worked	27,644
Total gallons of water used	431,246,400

Distribution of Carts, showing Entire Amount of Work Done.

DISTRICTS.	Hired Carts.	Number Miles Covered.	Average per Cart.
South Boston	20	40	2.00
East Boston	14	25	1.78
Charlestown	11	22	2.00
Brighton	21	41	1.95
West Roxbury	32	76	2.38
Dorchester	38	92	2.40
Roxbury	39	86	2.21
Back Bay	21		
South End	20	83	1.20
City Proper	28		
Totals	244	465	1.99

Location of Water Posts by Districts.

DISTRICTS.	YEAR.								Electric Hydrants.
	1891	1897	1898	1899	1900	1901	1902	1903	
South Boston..	23	28	35	38	39	39	39	39	
East Boston...	16	34	41	42	42	42	43	43	
Charlestown...	19	20	20	21	22	22	22	22	
Brighton.....	25	44	47	50	48	50	50	50	
West Roxbury,	50	67	75	86	81	84	85	85	
Dorchester....	61	83	88	99	100	101	101	102	
Roxbury.....	53	68	76	80	73	75	75	75	
City Proper...	24	53	69	74	68	73	73	72	5
Totals.....	271	397	451	490	473	486	488	488	5

NOTE. — During the year 12 posts were relocated, 2 posts abandoned, and 2 new posts erected.

APPENDIX H.

REPORT OF THE COMMISSIONERS FOR THE BOSTON AND CAMBRIDGE BRIDGES.

CAMBRIDGE-STREET BRIDGE.

Put in new decking and covered the whole with two-inch spruce plank; repaired draw, put in new flaps and repaired sidewalks. The down-stream draw-pier being very much decayed, we took out all the old plank, pieced out the timber where necessary, and covered the whole pier with new two-inch spruce plank.

The end wall on the Boston side of bridge fell, and we had the wall and stone pier rebuilt and pointed with Portland cement.

The drawtenders on this bridge also take care of Western-avenue bridge. They sweep the bridges in summer when necessary, and keep the sidewalks free from snow and ice in winter, and make all ordinary repairs.

There have been a great many more openings of the draw this year than last year.

CANAL OR CRAIGIE BRIDGE.

A new sidewalk two hundred and fifty feet long was built on the up-stream Boston end of the bridge by putting in new timber, new deck plank and a brick surface; a new fence was built and painted; and the roadway, sidewalks and fences on Cambridge end of bridge were repaired. An iron plate was placed under main posts of draw to keep it from settling; a new deck was laid over the draw and it was sheathed three times. The machinery connected with engine to move the draw was repaired.

Ordinary repairs, sweeping sidewalks and keeping sidewalks clear from snow and ice, draw and piers, are done by the drawtenders employed on the bridge.

Some repairs to the bridge on the Cambridge end will have to be done for the safety of the bridge. We do not intend to do any more than is necessary, as we expect the Commissioners who are to build the dam will soon begin work and assume control of the old bridge.

ESSEX-STREET BRIDGE.

We sheathed almost the entire surface of the roadway, repaired draw and sidewalks, put in new guards to draw, and shingled house occupied by drawtenders. The bridge is swept once a week in summer, and in winter the sidewalks are kept free from snow and ice; this work, with ordinary repairs, is done by the drawtenders employed on the bridge.

The petition that was presented to the City Council requesting that a double track be laid over the bridge to connect with cars running direct to Boston has not been acted on as yet.

There have been hearings before the Railroad Commissioners in regard to a new bridge to take the place of this old bridge, but no final action has been taken. It seems probable that a new bridge will be built at grade, and if so it will be a great accommodation to the people in that section of the city. It seems to me that a new bridge ought to be built.

There have been more openings of the draw this year than last.

HARVARD BRIDGE.

A portion of the deck on the draw being decayed, especially under the rails of the L road, it was replaced by laying down four-inch plank and covering that with three-inch plank sheathing. This work was done without delaying either the cars or vehicles. In doing this work new timbers were put in where necessary. The deck of the draw should be reconstructed at once. The machinery for moving the draw was repaired, and new oak headers at each end of draw were put in place.

The traffic over the bridge seems to be increasing, and the sidewalks are used a great deal for promenading. The asphalt sidewalks are cracked and broken and not very safe to walk on. In a number of places where the plank under the asphalt was decayed it was repaired by putting down four-inch plank. The present sidewalk ought to be taken up and hard-pine plank put in its place. It will be more lasting than to try to renew the present covering, as the depth of surface is not sufficient to make a good job.

The deck of the draw-pier is decayed and it will have to be replanked this next year. The iron fence ought to be painted, as in places it is getting very rusty.

The wooden blocks put down to take the place of the sheathing formerly used on the roadway have now been in

use about eighteen months and are wearing well. It is a great improvement over the old and unsatisfactory roadway formerly used on the bridge, that would have had to be replanked twice a year at an expense of about seven thousand dollars. The wooden pavement requires less cleaning; where we used to clean plank roadway once a week, and sometimes twice, we now clean the bridge only once a month.

The electric lights on the bridge are giving very good satisfaction.

Ordinary repairs, cleaning globes, sweeping, and cleaning snow from the sidewalks and draw, are done by the drawtenders employed on the bridge.

There have been many more openings of the draw this year than in former years, on account of the scows taking material dredged from below Harvard bridge to the new park being built on the Cambridge side of the river.

NORTH HARVARD BRIDGE.

Put new capping on pier and sheathed pier, roadway and draw of bridge with two-inch spruce. Put in new flaps to draw, and had the wall under Cambridge side of the bridge rebuilt and cemented, and the stone pier under the Boston side repaired and cemented. The bridge is in good condition as far as safety is concerned.

The drawtenders sweep the bridge and draw every week in summer, and keep it free from snow and ice in winter. They also do all the carpenter work required.

PRISON POINT BRIDGE.

Repaired draw and bridge; sheathed draw twice; built a small house on pier to hold coal; painted drawtenders' house inside and outside, and also small house connected with it. Drawtenders do all ordinary repairs, sweep the draw and keep it free from ice and snow.

Since my last report the Boston & Maine Railroad have built a temporary overhead bridge and draw up-stream that connects with a permanent one that is built of iron, commencing near the prison in Charlestown and ending near drawtenders' house. It is expected the overhead iron bridge, to connect with the part now built, will be completed in two years. The end of this bridge will connect with the pier now built at Bridge street, East Cambridge, directly opposite where a bridge will be built across the Charles river to Commercial avenue, Cambridge.

WEST BOSTON TEMPORARY BRIDGE.

The deck of the bridge and draw where decayed was renewed by putting down four-inch spruce plank, and the surface of the bridge and draw for the entire length was sheathed with two-inch spruce. New flaps to the draw were made and put in place.

The drawtenders make all ordinary repairs, attend to the opening of the draw (and they have a great many), clean and sweep the sidewalks in summer, and remove the snow from sidewalks and draw in winter.

The sidewalk was partly replanked with three-inch spruce. Two-inch oak planks were put on the two ends of the bridge next to the stone paving of the approaches.

WESTERN-AVENUE BRIDGE.

On the roadway, four-inch plank was put down for decking, and covered with two-inch sheathing; new flaps were made for the draw, and the draw was sheathed. The draw pier was repaired, and new capping put down. The stone wall under the bridge was relaid, and other parts of the wall pointed with cement. The machinery on the draw was repaired, and a new pile put in to protect guard to bridge.

The drawtenders sweep the bridge and sidewalks, and clean snow from draw and sidewalks.

River-street bridge and Western-avenue bridge are old bridges; they require constant care to keep them in repair, so no accidents will occur.

There have been more openings of draw this year than last.

IN GENERAL.

The usual statement is appended, showing the number of draw openings and the number of vessels which passed through.

The amount of revenue for rents, wharfage, etc., during the year has been $797.83; one-half of this has been paid to each city.

The following is a statement of the payments made by the City of Boston on account of the Boston and Cambridge bridges, February 1, 1903, to January 31, 1904:

Appropriation for financial year 1903-04 . .	$17,000 00
Expended to January 31, 1904	16,715 12
Unexpended balance February 1, 1904 . .	$284 88

Revenue, February 1, 1903, to January 31, 1904.

DATE.	L. B. 5 pages.	Items.	Total.	One-half Boston, City Collector.	One-half Cambridge, W. J. Marvin.
May 19.....	395	Rents and wharfage.....	$313 75	$156 87	$156 88
November 3....	449	" "	384 08	192 04	192 04
December 2....	460	Rents cable-house, Boston Elevated Railway Co.....	100 00	50 00	50 00
		Total.....	$797 83	$398 91	$398 92

Classification of Expenditures.

Object of Expenditures.	Canal or Craigie's.	Harvard.	Prison Point.	West Boston.	Cambridge Street.	Essex Street.	North Harvard Street.	Western Avenue.	General Account.	Totals.
Pay-rolls and extra help	$2,110 73	$1,804 84	$1,537 16	$1,675 88	$530 04	$670 00	$499 92	$559 92	$250 00	$9,638 49
Electric light	312 09	1,140 00	.....	622 30	49 98	177 75	.....	50 02	.....	2,352 14
General repairs	381 91	276 27	79 70	.....	252 19	101 06	70 00	146 75	.....	1,307 88
Lumber	471 47	212 00	48 16	.....	82 77	101 71	103 73	144 17	.....	1,164 01
Inspection, 1903	172 50	125 00	35 00	.....	105 00	65 00	.....	97 50	.....	600 00
Cleaning bridges	84 72	143 91	.....	158 75	.....	.....	.....	.....	.....	387 38
Fuel	165 32	52 70	29 88	40 03	18 12	30 12	11 95	3 13	.....	351 25
Sundries	54 39	65 88	25 20	17 75	12 97	7 77	14 97	37	.....	199 30
Iron work	93 24	19 61	50 71	1 61	12 75	3 12	72	17 24	.....	199 00
Electric current	.....	140 00	.....	.....	.....	.....	.....	.....	.....	140 00
Tools and hardware	53 19	8 78	11 71	1 25	14 91	14 15	3 12	16 93	.....	124 04
Paving	94 18	.....	.....	.....	.....	.....	.....	.....	.....	94 18
Watering roadways	31 00	.....	.....	.....	.....	.....	.....	.....	.....	31 00
Water rates	18 79	.....	.....	.....	.....	.....	.....	.....	.....	18 79
Travelling expenses	.....	.....	.....	.....	.....	.....	.....	.....	50 00	50 00
Printing and stationery	.....	.....	.....	.....	.....	.....	.....	.....	40 40	40 40
Telephone	.....	.....	.....	.....	.....	.....	.....	.....	17 26	17 26
Totals	$4,043 53	$3,988 99	$1,817 52	$2,517 57	$1,078 73	$1,170 68	$704 41	$1,036 03	$357 66	$16,715 12

Number of Times the Draws in the Boston and Cambridge Bridges have been Opened, and the Number of Vessels which have Passed through for the Year, beginning February 1, 1903, and ending January 31, 1904.

DATE.	CANAL OR CRAGIE'S.		HARVARD.		PRISON POINT.		WEST BOSTON.		CAMBRIDGE STREET.		ESSEX STREET.		NORTH HARVARD STREET.		WESTERN AVENUE.	
	No. of draw openings.	No. of vessels passing through.	No. of draw openings.	No. of vessels passing through.	No. of draw openings.	No. of vessels passing through.	No. of draw openings.	No. of vessels passing through.	No. of draw openings.	No. of vessels passing through.	No. of draw openings.	No. of vessels passing through.	No. of draw openings.	No. of vessels passing through.	No. of draw openings.	No. of vessels passing through.
1903.																
February	154	248	23	33	59	99	23	38	4	7	4	7	2	4	2	4
March	161	254	40	60	64	114	42	67	26	39	24	39	17	24	14	21
April	220	371	54	83	80	149	51	83	34	48	32	49	12	19	10	16
May	294	463	46	73	31	53	88	256	37	55	40	56	22	34	22	34
June	217	333	57	79	36	61	70	111	43	69	44	70	12	29	37	59
July	264	400	48	63	37	91	46	70	20	33	20	36	9	13	14	23
August	301	439	131	152	39	75	89	142	26	45	69	349	10	17	24	42
September	343	503	127	149	33	67	67	115	33	55	41	116	19	32	21	38
October	282	477	218	245	25	45	207	423	57	130	79	211	20	31	41	107
November	203	333	187	205	18	36	70	117	27	45	47	151	7	10	12	20
December	113	319	139	165	39	125	98	241	28	43	49	108	12	17	16	23
January, 1904	85	139	20	24	11	32	12	20	2	5	4	7	.....	.....	.....	.....
Totals	2,637	4,279	1,090	1,331	472	947	863	1,683	337	574	347	499	142	230	213	387

APPENDIX I.

CITY OF BOSTON ENGINEERING DEPARTMENT,
50 CITY HALL, February 1, 1904.

HON. JAMES DONOVAN,
Superintendent of Streets:

SIR, — I herewith submit the following report of the work done for the Street Department during the year ending January 31, 1904:

BULKHEAD AT CITY WHARF, CHARLESTOWN.

To support the filling for the extension of the paving yard on Medford street, Charlestown, a timber bulkhead about one hundred and fifty feet long has been built across the end of the south channel of Mystic river, and a wharf ten feet wide has been built in front of the bulkhead. This was done under a contract with George Hayes & Co., dated June 1, 1903, at a total cost of $3,090.

COLUMBIA ROAD.

Plans and specifications were prepared for building iron fences on the walls on Columbia road and Mt. Vernon street, adjoining the bridge over Shoreham street.

COLUMBIA-ROAD BRIDGE OVER N.Y., N.H. & H. R.R.

Asphalt sidewalks have been built on this bridge during the year under a contract with the Warren Brothers Company at a cost of $600.

FRANKLIN-STREET SUBWAY APPROACHES, ALLSTON.

A contract was made with William Crane, dated October 28, 1903, for building two inclined approaches to the Franklin-street subway, one from Lincoln street and one from Cambridge street. The work is now well under way, and will be completed about June 1, 1904.

GAINSBOROUGH-STREET FOOT-BRIDGE.

Concrete foundations for a foot-bridge, with stairways on both sides of the location of the Providence Division of the

New York, New Haven & Hartford Railroad at Camden and Gainsborough streets, have been built under a contract with the Metropolitan Contracting Company, dated April 11, 1903, at a cost of $1,979. Plans for the steel superstructure were also prepared and proposals for doing the work were received in September, 1903, but on account of the prevailing high price of structural steel at that time they were all rejected. Early in the coming season proposals will again be asked for, and the bridge will undoubtedly be erected during the summer.

Cumberland-street Retaining Wall.

A concrete retaining wall across the end of Cumberland street, adjoining the Providence Division of the New York, New Haven & Hartford Railroad, has been built under a contract with the Metropolitan Contracting Company, dated June 4, 1903, at a total cost of $1,150.

East Boston Ferries.

North Ferry, East Boston Side. — A contract was made March 13 with Lawler Brothers for rebuilding the middle pier in accordance with plans and specifications made by this department the previous year. Work was begun April 20 and completed June 26. The old pier was in very poor condition, except the outer thirty feet and a small part of the inshore end, and these were not rebuilt under the contract; the north pier was repaired by the driving of four additional piles; the cost of the contract work was $4,250. The heads of the middle and south piers, being badly worn and broken, were also rebuilt by Lawler Brothers.

South Ferry, Boston Side. — A report was made in March on the condition of the middle pier, recommending the renewal of a few piles and some other repairs. The work was done under the supervision of the Ferry Division.

Paving Wharf No. 2, 600 Albany Street.

The old wharf at this place consisted of a platform built on piles and cross-caps, on top of which was about four feet of earth; it had broken down in several places, and had been repaired numerous times, and was in poor condition. Plans and specifications were made for building a solid wharf, a stone wall to be built on three sides to retain the filling. The wall rests on a spruce pile foundation, the piles being capped, a close row of 6-inch spruce sheeting is driven in front of the piles and bolted to them, gravel filling is de-

posited inside the sheeting around the piles, and the foundation is planked with 4-inch spruce; on top of this a dry granite wall is built, capped with a granite coping laid in cement; a relieving platform is built, the wall ballasted and the wharf filled solid; oak fender piles, spaced six feet apart, are to be driven along the faces of wall, and capped and fastened to the coping.

A contract was made with John P. Cavanagh, March 16, for doing the work, the contract price being $24,700. The work is about 60 per cent. completed.

ASSESSMENT STREETS.

Working plans, specifications, and forms of contract were prepared and forwarded to the Street Department for the following assessment streets and public alleys:

Austin street, Washington street to Lawrence street.
Bennington street, Orleans street to Moore street.
Blandford street, Beacon street to B. & A. R.R.
Bow street, Washington street to City square.
Calder street, Blue Hill avenue to Canterbury street.
Carleton street, Yarmouth street to West Newton street.
Columbia road, bridge over Old Colony avenue to I street.
Cummington street, Blandford street to Lawton street.
Davenport street, Columbus avenue to Tremont street.
Devens street, Rutherford avenue to Washington street.
Dunreath street, Aspen street about 350 feet westerly.
Elmont street, Waterlow street to Faxon street.
Florida street, Templeton street to Ashmont street.
Hale street, South Margin street 142 feet southwesterly.
Jersey street, Brookline avenue to Audubon road.
Millet street, Talbot avenue to Southern avenue.
Oswald street, Calumet street to Hillside street.
Queensberry street, Audubon road to Audubon road.
Ritchie street, Columbus avenue to Marcella street.
Roseclair street, Dorchester avenue to Boston street.
Rowe street, Seymour street to Ashland street.
Rutherford avenue, Chapman street to Devens street.
St. Margaret street, Boston street to Roseclair street.
Seymour street, Canterbury street to Brown avenue.
Spalding street, South street to B. & P. R.R.
Swallow street, N street to O street.
Tower street, Hyde Park avenue to Forest Hills Cemetery.
Walk Hill street, South street to Washington street.
Walter street, Centre street to South street.
Washington street, Spring lane 154 feet southerly.
Public Alley 303, from between 46 and 48 Pinckney street.
Public Alley 804, Alley 803 to Alley 805.

Plans and Specifications for Repaving Streets.

Preliminary surveys were made and the working plans, specifications and forms of contract were prepared and forwarded to the Street Department for repaving the following streets:

Avery street, Washington street 300 feet westerly.
Berkeley street, Beacon street to Boylston street.
Beverly street, Washington street north to Warren bridge.
Broad street, Central street to Atlantic avenue.
Bromfield street, Tremont street to Washington street.
Central street, Broad street to India street.
Dartmouth street, Beacon street to Newbury street.
Dover street, Washington street to Harrison avenue.
E street, West Broadway to West Fourth street.
E street, West Seventh street to West Eighth street.
Franklin street, Oliver street to Broad street.
Gainsborough street, Huntington avenue to B. & P. R.R.
Harrison avenue, Bedford street to Essex street.
Harrison avenue, Eustis street to Warren street.
Kneeland street, Washington street to Atlantic avenue.
Lincoln street, Main street to Rutherford avenue.
Minot street, Leverett street to Lowell street.
Nashua street, Causeway street to Minot street.
Oneida street, Harrison avenue to Albany street.
P street, East Sixth street to Columbia road.
Roxbury street, Shawmut avenue to Kent street.
Seneca street, Harrison avenue to Albany street.
Silver street, A street to B street.
Silver street, E street 220 feet westerly.
Smith street, St. Alphonsus street to Phillips street.
Sudbury street, Court street to Haymarket square.
West Fourth street, E street 220 feet westerly.
West Newton street, Huntington avenue to Columbus avenue.

Miscellaneous.

Plans have been prepared of the following assessment streets preliminary to construction:

Belgrade avenue, South street to Anawan avenue.
Causeway street, Beverly street to 142 feet northeasterly.
Dorchester street, West Eighth street to Dorchester avenue.
Hyde Park avenue, Walk Hill street to Ashland street.

Preliminary surveys have been made and plans prepared for repaving the following streets:

Battery street, Hanover street to Commercial street.
Beach street, Harrison avenue to Atlantic avenue.

Causeway street, Leverett street to Nashua street.
Essex street, Harrison avenue to Lincoln street.
Harrison avenue, Beach street to Kneeland street.
Massachusetts avenue, Southampton street to N. E. R.R. bridge.
Montgomery street, Clarendon street to Dartmouth street.
Norfolk avenue, East Cottage street to Marshfield street.
South street, Essex street to Kneeland street.
Southampton street, Massachusetts avenue to N. E. R.R. bridge.
Stoughton street, Columbia road to Pleasant street.
West Dedham street, Shawmut avenue to Tremont street.

GRADING STREET RAILWAY TRACKS.

Grades for tracks in the following streets have been determined and the necessary surveys made for determining the same:

Boston Elevated Railway Company.

Ashland street, West Roxbury, Washington street to near Harvard street.
Battery street, Hanover street to Commercial street.
Beach street, Harrison avenue to Atlantic avenue.
Belgrade avenue.
Beverly street, Causeway street to Warren bridge.
Blue Hill avenue, opposite Elmo street.
Blue Hill avenue, south of Talbot avenue.
Broad street, Wendell street to High street.
Cambridge street, Union square to Allston bridge.
Cambridge street, Allston bridge to North Harvard street.
Causeway street, Leverett street to Nashua street.
Centre street, West Roxbury, Beech street to Spring street.
Dorchester avenue, Crescent avenue to Belfort street.
Dorchester avenue, Savin Hill avenue to Roach street.
Dorchester avenue, Freeport street to Ellet street.
Dorchester avenue, Adams street to N. Y., N. H. & H. R.R.
Dorchester street, West Eighth street to Dorchester avenue.
Dover street, Washington street to Dover-street bridge.
East Sixth street, P street to Q street.
E street, West Seventh street to West Eighth street.
Harrison avenue, Hayward place to Essex street.
Harrison avenue, Beach street to Kneeland street.
Harrison avenue, Bennet street to Railroad bridge.
Harrison avenue, Dover street to Laconia street.
Harrison avenue, Savoy street to Union Park street.
Harrison avenue, Thorndike street to Warren street.
Heath street, at Huntington avenue.
Kneeland street, Washington street to Atlantic avenue.
Massachusetts avenue, Huntington avenue to Columbus avenue.
Mattapan square.
Northampton street, Tremont street to Columbus avenue.

River street, Dorchester, Blue Hill avenue to Pierce square.
Roxbury street, Shawmut avenue to Kent street.
South and Brandon streets, Washington street to Corinth street.
Spring street, West Roxbury, Centre street to Garden street.
Spring street, West Roxbury, under N. Y., N. H. & H. R.R. bridge.
Spring street, West Roxbury, Gardner street to Charles river.
State street, Congress street to Devonshire street.
Stoughton street, Columbia road to Pleasant street.
Sudbury street, Court street to Haymarket square.
Summer street, Dorchester avenue to N. Y., N. H. & H. R.R. bridge.
Washington street, Roxbury, Atherton street to School street.
Washington street, West Roxbury, Green street to the Arborway.
Washington street, West Roxbury, Kittridge street to Metropolitan avenue.

Total length of single track grades, 21.1 miles.

Miscellaneous Plans, Specifications, etc.

Belgrade avenue, plan for rough grading the portion between Amherst street and Arden street.
Blandford street, plan and specification for concrete retaining wall, wooden fences, and bulkhead.
Bowdoin street, Dorchester, plan for widening easterly sidewalk between Mt. Ida road and Draper street.
Carleton street, plan and specifications for concrete retaining walls on easterly side of street, between Berwick park and West Newton street.
Causeway street, widening, grade for edgestone on northerly side from Beverly street, 142 feet easterly.
Dorchester street, at Cyrus Alger estate, plan and specification for retaining wall and fence.
Hale street, plan and specification for concrete retaining wall and wooden fence.
Hyde Park avenue, plan for rough grading the portion between Walk Hill street and Blakemore street.
P street, plan and specification for concrete retaining wall and wooden fence.

Miscellaneous.

A plan was made for underdraining the sidewalk of N street, South Boston, adjoining Independence square.

A plan was made for building the retaining wall on the easterly side of London street, near Maverick street, East Boston.

Plans and specifications have been prepared for the construction of the following work:

Masonry abutments and steel superstructure for bridge at Harvard street, Dorchester, over the Midland Division of the N. Y., N. H. & H. R.R.

Masonry abutments and steel superstructure for bridge at Norfolk street, Dorchester, over the Midland Division of the N. Y., N. H. & H. R.R.

Masonry abutments for railroad bridge over Temple street, West Roxbury.

Widening the roadway on the water side of Atlantic avenue, between Rowe's wharf and Eastern avenue.

Timber bulkhead at Gateley's wharf, Albany street.

Plans and estimates have been made for the masonry abutments for a railroad bridge over Geneva avenue, Midland Division of the N. Y., N. H. & H. R.R.

A map of "Boston Proper" has been prepared, showing public alleys and private streets and alleys as far south as Massachusetts avenue.

Tables have been made to accompany the above map, giving the lengths, areas, conditions and estimated cost of paving said private streets and alleys.

Plans showing details of construction of streets and other structures have been made, from time to time, as required.

The Street Book, giving lengths and areas of pavements in accepted streets and public alleys, has been corrected to February 1, 1903, and is now being corrected to February 1, 1904.

Respectfully submitted,

WILLIAM JACKSON,
City Engineer.

APPENDIX J.

REPORT OF THE CHIEF SMOKE INSPECTOR.

64 PEMBERTON SQUARE,
BOSTON, February 1, 1904.

HON. JAMES DONOVAN,
Superintendent of Streets:

DEAR SIR, — I herewith respectfully submit the report of the work performed by this office during the past year in the abatement of the smoke nuisance.

Observations, taken by the inspectors at all hours, seem to show an improvement in the conditions, as regards violations of the law, due, in a great measure, to the co-operation of many of the owners of power and heating plants throughout the city.

Some of these people have made changes in the mechanical installation of their plants; others have adopted smoke-consuming devices, while others have changed the quality of fuel used, and all have evinced a desire to help remedy the existing conditions.

This state of affairs has been brought about by the inspectors calling in person and suggesting the various changes which, in most cases, have been cheerfully adopted by the party complained of.

Observations, of short duration, are being constantly taken by the inspectors, and, in this way, the department is kept informed of the condition of the various plants in every section of the city.

BOILER APPLICATIONS.

During the year 325 applications have been received from the Building Department for boiler permits and were disposed of as follows:

Signed to use hard coal	304
New consumers adopted	14
Gas-engines	1
Duplicates	4
Unsigned	2
	325

Nova Scotia Coal.

Importations of coal from Nova Scotia at the Port during the Year ending January 31, 1904.

MONTHS.	Tons.	Value.
February, 1903	48,637	$84,448
March	74,295	106,622
April	65,030	134,168
May	30,213	38,523
June	54,135	75,117
July	47,136	63,183
August	44,114	72,168
September	43,770	70,976
October	43,651	73,801
November	57,316	84,100
December	86,420	154,557
January, 1904	68,071	138,209
Total	662,788	$1,100,872

Nova Scotia coal recorded at the Collector's office (Boston Custom House) for the year ending January 31, 1904, shows 662,788 tons as against 693,006 for the year ending January 31, 1903.

SPECIAL REPORTS.

April 2. Report on complaint of Conrad & Co., 35 Winter street.

April 4. Report on complaint of J. L. Bailey, 131 State street.

April 6. Report on complaint of The Copley, 18 Huntington avenue.

April 8. Report on complaint against The Boston Tow Boat Company.

April 14. Report on complaint of Boston Elevated Power House, Albany street.

April 21. Report on complaint of Edward L. Amory, Hotel Touraine.

April 22. Report on complaint against D. J. McDonald, Tremont street.

May 1. Report on complaint against the Boston & Albany Railroad.

May 4. Report on complaint against plant, 24 Carver street.

June 4. Report on communication received from Charles A. Crane.

SUMMARY.

I submit a brief summary of work for the year ending January 31, 1904 :

Number of applications for boiler permits received	325
Number of smoke preventers adopted	14
Number agreeing to burn hard coal	304
Number of short observations taken	150
Number of special reports	10
Number of special requests for observations received	6

Respectfully submitted,

JOHN J. O'NEIL,
Chief Smoke Inspector.

APPENDIX K.

REPORT OF THE CIVIL SERVICE CLERK.

BOSTON, February 1, 1904.

HON. JAMES DONOVAN,
Superintendent of Streets:

DEAR SIR, — I submit herewith a report of the work performed in connection with the Civil Service Commission, together with a statement of the force employed and eligible for employment for the year ending January 31, 1904:

Requisitions made	130
Requisitions cancelled	4
Certifications returned, no selection	35
Number of men called for	234
Number of men certified	248
Number of men selected, including veterans	150
Number of veterans appointed	13
Applications made for promotion	14
Promotions allowed	10
Promotions allowed provisionally	2
Promotions not allowed	2
Appointments made provisionally under Civil Service Rule No. 36	26
Requests to cancel discharges	16
Requests to cancel discharges allowed	13
Requests to cancel discharges not allowed	3
Requests for reinstatements	6
Requests for reinstatements allowed	5
Requests for reinstatements not allowed	1

Number of transfers made from other city and state departments, with the approval of the Civil Service Commission, as follows:

From Water Department	2
From City Engineer	2
From Metropolitan Water and Sewerage Board	2
From Boston Transit Commission	1
From Massachusetts Highway Commission	1
	8

Number of transfers made to other city and state departments, with the approval of the Civil Service Commission, as follows:

To Metropolitan Park Commission 1

Notices of the discharge of 307 men were forwarded to the Civil Service Commission.

The records of the department show that there are now 3,540 persons eligible for employment in the several divisions, and, of that number, 3,132 were upon the January, 1904, pay-rolls.

Grade and Number of Employees.

TITLE.	DIVISIONS.								
	Central Office.	Paving.	Sewer.	Sanitary.	Street Cleaning.	Ferry.	Bridge.	Street Watering.	Total.
Superintendent	1	....	....	....	....	....	....	....	1
Deputies	....	1	1	1	1	1	1	1	7
Purchasing agent	1	....	....	....	....	....	....	....	1
Purchasing agent's assistant	1	....	....	....	....	....	....	....	1
Clerks	3	15	8	3	3	2	3	2	39
Messengers	1	8	7	4	2	....	2	....	24
Chief engineer (civil)	....	1	1	...	....	....	....	....	2
Assistant engineers (civil)	....	4	17	....	....	....	....	....	21
Draughtsmen	....	1	35	....	....	....	....	....	36
Instrument-men	....	5	19	....	....	....	....	....	24
Resident engineer	....	....	1	....	....	....	....	....	1
Rodmen	....	....	37	....	....	....	....	....	37
Aids or tallymen	....	18	10	5	3	....	....	....	36
Axemen	....	1	1	....	....	....	....	....	2
Inspectors	1	37	64	27	5	....	....	....	134
Foremen	....	10	10	6	12	3	....	....	41
Sub-foremen	....	33	10	13	15	....	2	....	73
Brick-slingers	....	....	6	....	1	....	....	....	7
Brush and broom-makers	....	....	....	....	3	....	....	....	3
Blacksmiths and assistants	....	14	4	13	....	....	....	....	31
Boatmen	....	1	1	....	....	....	1	....	3
Carried forward	8	149	232	72	45	6	9	3	524

Grade and Number of Employees. —*Continued.*

TITLE.	DIVISIONS.								
	Central Office.	Paving.	Sewer.	Sanitary.	Street Cleaning.	Ferry.	Bridge.	Street Watering.	Total.
Brought forward	8	149	232	72	45	6	9	3	524
Boilermakers and assistants	....	2	....	....	....	3	....	....	5
Brick-sorters	....	2	....	....	....	....	....	....	2
Bracers and assistants	....	3	24	1	3	....	....	....	31
Bicycle tallymen	....	2	....	3	1	....	....	6	12
Boys	....	6	7	....	....	....	....	....	13
Blue-printer	....	....	1	....	....	....	....	....	1
Carriage-washer	....	....	....	1	1	....	....	...	2
Captains	....	....	1	....	....	13	....	...	14
Custodian	....	7	2	1	1	....	....	....	11
Carpenters and assistants	....	23	9	2	..	4	7	....	45
Carriage-trimmer	....	4	1	3	....	....	....	....	8
Concreter	....	1	1	1	....	....	...	....	3
Chief inspector	....	....	1	....	....	....	....	....	1
Concrete-mixers	....	1	3	1	2	....	....	....	7
Cement-testers	....	....	4	....	....	....	....	....	4
Coal-passers	....	....	5	....	...	....	....	....	5
Caretakers	....	....	1	....	....	....	....	....	1
Chief storekeeper	....	....	1	....	....	....	....	....	1
Cashier	....	....	....	....	....	1	....	....	1
Cooper	....	....	....	1	1	....	....	....	2
Chipper	....	3	....	1	....	....	....	....	4
Coachmen	....	3	2	....	1	....	....	1	7
Drawtenders and assistants	....	....	....	....	....	....	119	....	119
Drivers	....	....	....	..	2	....	1	...	3
Dynamo-tender	....	....	1	....	....	....	....	....	1
Deckhands	....	....	....	....	....	19	....	....	19
Derrick-men	....	1	3	....	....	....	....	....	4
Dumpers	....	....	....	16	....	...	....	....	16
Chief engineer (steam)	....	....	1	....	....	1	....	....	2
Engineers and assistants	....	18	28	....	....	12	4	....	62
Edgestone-setters	....	....	2	....	....	....	....	....	2
Edgestone-joiners	....	....	....	....	1	....	....	....	1
Carried forward	8	225	330	103	58	59	140	10	933

Grade and Number of Employees. — *Continued.*

TITLE.	DIVISIONS.								
	Central Office.	Paving.	Sewer.	Sanitary.	Street Cleaning.	Ferry.	Bridge.	Street Watering.	Total.
Brought forward	8	225	330	103	58	59	140	10	933
Electricians	....	4	5	4	2	2	2	....	19
Electrical engineers	....	....	....	....	....	3	1	....	4
Farmers	....	....	....	....	....	....	....	....	.....
Feeders	....	1	....	4	....	....	....	....	5
Firemen	....	5	9	....	....	27	....	....	41
Gas-fitters	....	....	1	....	....	....	....	....	1
Gilders	....	....	....	3	....	....	....	....	3
Gauge-makers	....	1	....	....	..	....	....	....	1
Gatemen	....	....	3	....	....	12	....	....	15
Granolithic workers	....	....	....	....	....	....	....	....	.....
Harness-makers and assistants	....	2	....	6	....	....	....	....	8
Graders	....	....	....	....	1	....	....	....	1
Horsemen	....	....	....	1	....	....	....	....	1
Horse-shoers	....	1	....	3	....	....	....	....	4
Horse-clippers	....	5	....	3	....	....	....	....	8
Hostlers	....	....	1	1	6	....	2	....	10
Hose-repairers	....	....	....	1	....	....	...	....	1
Horse-blanket repairers	....	....	....	1	....	....	....	....	1
Iron-workers	....	....	1	1	....	1	....	....	3
Janitors	....	5	12	6	4	9	2	....	38
Janitresses	....	....	....	....	....	5	....	....	5
Joiners	....	....	....	....	....	2	....	....	2
Lanternmaker	...	....	....	1	....	....	....	....	1
Laborers and helpers	....	439	415	172	226	4	....	....	1,256
Locksmen	....	6	10	....	7	....	....	....	23
Lamplighters	....	....	....	....	....	2	....	....	2
Ledgemen	...	10	54	2	5	....	....	...	71
Machinists and assistants	....	1	2	....	....	....	....	....	3
Mate	....	...	1	....	....	2	....	...	3
Masons (stone and brick)	....	1	36	....	....	....	....	....	37
Masons' tenders	...	....	1	....	2	....	....	....	3
Map-mounter	....	....	....	1	....	....	....	....	1
Carried forward	8	706	881	313	311	128	147	10	2,504

Grade and Number of Employees.—*Continued.*

TITLE	DIVISIONS.								
	Central Office.	Paving.	Sewer.	Sanitary.	Street Cleaning.	Ferry.	Bridge.	Street Watering.	Total.
Brought forward	8	706	881	313	311	128	147	10	2,504
Measurers	...	....	1	....	....	....	....	....	1
Millwrights	....	1	....	1	....	....	....	....	2
Oilers	....	....	8	....	....	3	....	....	11
Oil-testers	....	....	1	....	....	....	....	....	1
Pavers and assistants	....	62	....	....	3	....	....	....	65
Panmen	....	...	1	....	4	....	....	....	5
Painters	....	3	....	3	1	2	4	....	13
Pile-plugger	....	....	1	...	....	....	....	....	1
Patternmakers	....	....	1	....	....	....	....	....	1
Pilots	....	....	1	....	....	....	....	....	1
Prison-wagon drivers	....	....	....	2	....	....	....	....	2
Pipe-fitter	....	....	....	....	....	1	....	....	1
Pipe-layers	....	1	3	....	....	....	....	....	4
Plumber's helper	....	1	....	....	....	....	....	....	1
Powdermen	...	9	....	....	....	....	....	....	9
Plasterer's helper	....	1	....	1	1	....	....	....	3
Quartermasters	....	....	....	....	....	13	....	....	13
Riggers	....	....	1	....	....	1	....	....	2
Rockmen	....	....	5	....	....	....	....	....	5
Rubber-goods repairer	....	....	1	....	....	....	....	....	1
Roofer	....	....	....	1	....	....	....	....	1
Rammer	....	2	1	....	....	....	....	....	3
Supervisor of permits	....	1	....	....	....	....	....	....	1
Supervisor of bridges	....	....	....	....	....	....	1	....	1
Supervisor of construction	....	....	....	....	....	...	1	....	1
Sailors	....	....	3	....	....	....	....	....	3
Steamfitters and assistants	....	1	....	1	....	....	....	....	2
Steam-drillers	....	6	1	....	....	....	....	....	7
Sheet-plank drivers	....	....	1	....	....	....	....	....	1
Stenographers	....	1	2	....	....	....	....	....	3
Sign painters	....	....	....	4	....	....	....	....	4
Smoke inspectors and assistants	....	....	3	....	....	....	....	....	3
Carried forward	8	795	916	326	320	148	153	10	2,676

Grade and Number of Employees. — *Concluded.*

TITLE.	DIVISIONS.								
	Central Office.	Paving.	Sewer.	Sanitary.	Street Cleaning.	Ferry.	Bridge.	Street Watering.	Total.
Brought forward	8	795	916	326	320	148	153	10	2,676
Stonecutters	....	26	4	....	....	....	....	....	30
Saw-filers	....	1	2	....	....	....	1	....	4
Scavengers	....	....	....	4	....	....	....	....	4
Storekeepers	....	....	....	....	....	....	....	....	.....
Scowmen	....	....	....	2	....	....	....	....	2
Sash and doormakers	....	1	....	....	....	....	....	....	1
Stock-keeper	....	....	....	....	....	1	....	....	1
Stablemen	....	10	1	18	7	....	1	....	37
Sweeping-machine drivers	....	....	....	....	6	....	....	....	6
Tagmen	....	5	1	....	....	....	....	....	6
Teamsters	....	58	7	148	19	....	2	....	234
Toolmakers	....	1	....	....	....	....	....	....	1
Tollmen	....	....	....	....	....	10	....	....	10
Tar-boiler	....	1	....	....	....	....	....	....	1
Tankmen	....	....	....	....	....	1	....	....	1
Watchmen	....	16	11	7	1	5	8	....	48
Whitewashers	....	1	....	....	1	....	....	....	2
Weighers and assistants	....	13	3	2	....	....	....	....	18
Water-cock makers	....	....	2	....	....	....	....	....	2
Wharfingers and assistants	....	9	8	....	2	1	1	....	21
Wheelwrights and assistants	...	....	....	2	....	....	....	....	2
Yardmen	....	5	3	5	1	....	1	....	15
Valvemakers	....	....	2	....	....	....	....	....	2
Vulcanizers	....	...	1	....	....	....	....	...	1
Veterinary's assistant	....	1	2	1	3	....	....	....	7
Totals	8	943	963	515	360	166	167	10	3,132

Comparative Table Showing Number of Employees February 1, 1903, and February 1, 1904.

TITLE.	DIVISIONS.								
	Central Office.	Paving.	Sewer.	Sanitary.	Street Cleaning.	Ferry.	Bridge.	Street Watering.	Total.
February 1, 1903	8	997	974	526	347	137	163	7	3,159
February 1, 1904	8	943	963	515	360	166	167	10	3,132

Respectfully submitted,

JOHN J. QUINN,
Civil Service Clerk.

APPENDIX L.

FORMER SUPERINTENDENTS AND DOCUMENT NUMBERS OF ANNUAL REPORTS.

Bridge Department before 1891.

Previous to 1886, under charge of City Engineer.

NAME.	Year.
Bartholomew M. Young	1886 to 1889
James H. Nugent	1889 to 1891

Bridge Department before 1891.

NAME OF DOCUMENT.	For Year.	Pub. Year.	No. of Doc.
Annual report	1886	1887	29
" "	1887	1888	26
" "	1888	1889	29
" "	1889	1890	22
" "	1890	1891	*

* Published in annual report, Executive Department, Part I., City Document, No. 1, 1891.

Paving Department before 1891.

NAME.	Year.
Enoch Patterson, Superintendent Streets and Drains	1825 to 1831
Zephaniah Sampson, " " " "	1831 to 1846
Thomas Hunting, Superintendent	1846 to 1853
Alfred T. Turner, "	1853 to 1864
Charles Harris, "	1864 to 1883
Nehemiah T. Merritt, "	1883
James J. Flynn, "	1883
Charles Harris, "	1884
Michael Meehan, "	1884 to 1886
John W. McDonald, "	1886 to 1889
J. Edwin Jones, "	1889 to 1891

Paving Department before 1891.

NAME OF DOCUMENT.	For Year.	Pub. Year.	No. of Doc.
Quarterly report	.....	1851	6
" "	.....	1851	29
Annual report	1851	1852	2
" "	1852	1853	6
" "	1853	1854	6
" "	1854	1855	5
" "	1855	1856	3
" "	1856	1857	3
" "	1857	1858	3
" "	1858	1859	5
" "	1859	1860	6
" "	1860	1861	5
" "	1861	1862	4
" "	1862	1863	3
" "	1863	1864	3
" "	1864	1865	7
" "	1865	1866	3
" "	1866	1867	6
" "	1867	1868	9
" "	1868	1869	14
" "	1869	1870	13
" "	1870	1871	12
" "	1871	1872	16
" "	1872	1873	21
" "	1873	1874	25
" "	1874	1875	27
" "	1875	1876	30
" "	1876	1877	38
" "	1877	1878	29
" "	1878	1879	24
" "	1879	1880	24
" "	1880	1881	48
" "	1881	1882	51
" "	1882	1883	47
" "	1883	1884	46
" "	1884	1885	97
" "	1885	1886	30
" "	1886	1887	16
" "	1887	1888	23
" "	1888	1889	30
" "	1889	1890	19
" "	1890	1891	*

*Published in annual report, Executive Department, Part II., City Document, No. 1, 1891.

Sewer Department before 1891.

NAME.	Year.
Enoch Patterson, Superintendent	1825 to 1831
Zephaniah Sampson, "	1831 to 1837
Charles B. Wells, "	1837 to 1856
Simeon B. Smith, "	1856 to 1863
William H. Bradley, "	1863 to 1883
Horace A. Moses, "	1883 to 1885
Thomas J. Young, "	1885 to 1887
Seth Perkins, "	1887 to 1889
Charles Morton, "	1889 to 1891

Sewer Department before 1891.

NAME OF DOCUMENT.	For Year.	Pub. Year.	No. of Doc.
Annual report	1859	1861	11
" "	1860	1861	12
" "	1861	1862	12
" "	1862	1863	13
" "	1863	1864	11
" "	1864	1865	5
" "	1865	1866	6
" "	1866	1867	8
" "	1867	1868	13
" "	1868	1869	11
" "	1869	1870	3
" "	1870	1871	11
" "	1871	1872	10
" "	1872	1873	13
" "	1873	1874	12
" "	1874	1875	17
" "	1875	1876	11
" "	1876	1877	13
" "	1877	1878	15
" "	1878	1879	11
" "	1879	1880	16
" "	1880	1881	19
" "	1881	1882	18
" "	1882	1883	16
" "	1883	1884	43
" "	1884	1885	
" "	1885	1886	58
" "	1886	1887	69
" "	1887	1888	81
" "	1888	1889	129
" "	1889	1890	14
" "	1890	1891	*

*Published in annual report, Executive Department, Part II., City Document, No. 1, 1891.

Health Department before 1891.

Sanitary.

NAME.	Year.
Ezra Forristall, Superintendent	1853 to 1854
Joseph W. Coburn, "	1854 to 1855
Ezra Forristall, "	1855 to 1869
George W. Forristall, "	1869 to 1890

Health Department before 1891.

Sanitary.

NAME OF DOCUMENT.	Year.	Pub. Year.	No. of Doc.
Annual report	1853	1854	7
" "	1854	1855	6
" "	1855	1856	4
" "	1856	1857	4
" "	1857	1858	4
" "	1858	1859	4
" "	1859	1860	5
" "	1860	1861	6
" "	1861	1862	5
" "	1862	1863	5
" "	1863	1864	4
" "	1864	1865	4
" "	1865	1866	8
" "	1866	1867	7
" "	1867	1868	8
" "	1868	1869	12
" "	1869	1870	4
" "	1870	1871	10
" "	1871	1872	17
" "	1872	1873	40
Annual reports from 1873 to 1884, inclusive; the Superintendent's report was embodied in the report of the Board of Health	1885	1886	45
Annual report	1886	1887	22
" "	1887	1888	16
" "	1888	1889	23
" "	1889	1890	21
" "	1890	1891	*

*Published in annual report, Executive Department, Part II., City Document, No. 1, 1891.

Commissioners of Cambridge Bridges before 1891.

(West Boston, Canal and Prison Point.)

NAME.	Year.
Frederick W. Lincoln, Commissioner for Boston..	May 22, 1871, to March, 1901.
Ezra Parmenter, Commissioner for Cambridge....	June 14, 1871, to Jan. 31, 1883.
William J. Marvin, Commissioner for Cambridge..	March 28, 1883, to present time.

NOTE.—Harvard bridge added in 1892. Essex street, Cambridge street, North Harvard street, and Western avenue bridges to Cambridge were transferred from Street Department, July 1, 1898.

Commissioners of Cambridge Bridges before 1891.

(West Boston, Canal and Prison Point.)

NAME OF DOCUMENT.	For Year.	Pub. Year.	No. of Doc.
Annual report	1871	1872	19
" "	1872	1873	12
" "	1873	1874	16
" "	1874	1875	23
" "	1875	1876	20
" "	1876	1877	12
" "	1877	1878	10
" "	1878	1879	8
" "	1879	1880	12
" "	1880	1881	8
" "	1881	1882	15
" "	1882	1883	15
" "	1883	1884	19
" "	1884	1885	8
" "	1885	1886	12
" "	1886	1887	19
" "	1887	1888	25
" "	1888	1889	22
" "	1889	1890	20
" "	1890	1891	*

*Published in annual report, Executive Department, Part I., City Document, No. 1, 1891.

Ferry Department before 1895.

NAME.	Year.	
Board of Ferry Directors	1870	1891
William J. Burke, Superintendent	1891	May 1, 1895
Thomas Kellough	May 1, 1895	July 1, 1895

Ferry Department before 1895.

NAME OF DOCUMENT.	For Year.	Pub. Year.	No. of Doc.
Annual report.....	1870	1871	41
" "	1871	1872	55
" "	1872	1873	81
" "	1873	1874	42
" "	1874	1875	65
" "	1875	1876	51
" "	1876	1877	53
" "	1877	1878	49
" "	1878	1879	60
" "	1879	1880	74
" "	1880	1881	77
" "	1881	1882	72
" "	1882	1883	93
" "	1883	1884	76
" "	1884	1885	72
" "	1885	1886	28
" "	1886	1887	12
" "	1887	1888	10
" "	1888	1889	3
" "	1889	1890	4
" "	1890	1891	*
" "	1891	1892	12
" "	1892	1893	11
" "	1893	1894	11
" "	1894	1895	11

*Published in annual report, Executive Department, Part I., City Document, No. 1, 1891.

Street Department since 1891.

Superintendent.

Henry H. Carter, Member of American Society Civil Engineers.
Resigned December 8, 1894.

Charles R. Cutter, *Acting Superintendent from December 8, 1894, to January 14, 1895.*
Member of the Boston Society Civil Engineers.

Bertrand T. Wheeler, *Superintendent from January 14, 1895, to February 4, 1896.*
Member of the Boston Society Civil Engineers.

Benjamin W. Wells, *Superintendent from February 4, 1896, to February 1, 1900.*

Bertrand T. Wheeler, *Superintendent from February 2, 1900, to November 25, 1901.*
Member of the Boston Society Civil Engineers.
Resigned November 25, 1961.

William Jackson, *Acting Superintendent from November 25, 1901, to January 14, 1902.*
Member of American Society Civil Engineers.

Guy C. Emerson, *Deputy Superintendent in charge of the Department, from November 25, 1901, to January 14, 1902.*
Member of the Boston Society Civil Engineers.

James Donovan, *Superintendent from January 14, 1902, to the present time.*

BRIDGE DIVISION. — John A. McLaughlin, *Deputy Superintendent until June 1, 1895.*

BRIDGE DIVISION. — John P. Wise, *Deputy Superintendent from June 1, 1895, to February 14, 1896.*

BRIDGE DIVISION. — William H. Carberry, *Deputy Superintendent from February 14, 1896, to February 3, 1900.*

BRIDGE DIVISION. — Walter Reed, *Deputy Superintendent from February 5, 1900, to January 22, 1902.*

BRIDGE DIVISION. — Joseph P. Lomasney, *Deputy Superintendent from January 22, to the present time.*

FERRY DIVISION. — Thomas Kellough, *Deputy Superintendent from July 1, 1895, to February 14, 1896.*

FERRY DIVISION. — William F. McClellan, *Deputy Superintendent from February 14, 1896, to February 3, 1900.*

FERRY DIVISION. — Joseph J. Dennison, *Deputy Superintendent from February 5, 1900, to January 22, 1902.*

FERRY DIVISION. — William J. Donovan, *Deputy Superintendent from January 22, 1902, to the present time.*

PAVING DIVISION. — Charles R. Cutter, *Deputy Superintendent until January 24, 1895.*

PAVING DIVISION. — Darius N. Payson, *Deputy Superintendent from January 24, 1895, to March 1, 1896.*

PAVING DIVISION. — John L. Kelly, *Deputy Superintendent from March 1, 1896, to February 3, 1900.*

PAVING DIVISION. — Darius N. Payson, *Deputy Superintendent from February 5, 1900, to January 24, 1902.*

PAVING DIVISION. — Joshua Atwood, 3d, *Acting Deputy Superintendent from January 24, 1902, to March 26, 1902.*

PAVING DIVISION. — Henry V. Macksey, *Deputy Superintendent from March 26, 1902, to the present time.*

SANITARY DIVISION. — George W. Forristall,* *Deputy Superintendent.*

SANITARY DIVISION. — Philip A. Jackson, *Acting Deputy Superintendent from January 16, 1894, to February 1, 1895.*

SANITARY DIVISION. — Charles A. Young, *Deputy Superintendent from February 1, 1895, to March 1, 1896.*

SANITARY DIVISION. — Patrick O'Shea, *Deputy Superintendent from March 1, 1896, to February 3, 1900.*

SANITARY DIVISION. — Charles A. Young, *Deputy Superintendent from February 5, 1900, to January 22, 1902.*

SANITARY DIVISION. — Daniel P. Sullivan, *Deputy Superintendent from January 22, 1902, to the present time.*

SEWER DIVISION. — Henry W. Sanborn, *Deputy Superintendent until July 10, 1896.*
Member Philadelphia Society Civil Engineers.

SEWER DIVISION. — Charles R. Cutter, *Deputy Superintendent from July 10, 1896, to February 3, 1900.*
Member of the Boston Society Civil Engineers.

SEWER DIVISION. — Guy C. Emerson, *Deputy Superintendent from February 5, 1900, to November 25, 1901, and from January 14 to January 22, 1902.*
Member of the Boston Society of Civil Engineers.

SEWER DIVISION. — Henry W. Sanborn, *Acting Deputy Superintendent from November 25, 1901, to January 14, 1902.*
Member Philadelphia Society Civil Engineers.

SEWER DIVISION. — George Phillips, *Deputy Superintendent from January 22, 1902, to the present time.*

STREET CLEANING DIVISION. — Philip A. Jackson, *Deputy Superintendent until March 22, 1895.*

STREET CLEANING DIVISION. — Benjamin M. Cram, *Deputy Superintendent from March 22, 1895, to March 1, 1896.*

STREET CLEANING DIVISION. — Joshua Atwood, 3d, *Deputy Superintendent from March 1, 1896, to February 3, 1900.*
Member of the Boston Society Civil Engineers.

STREET CLEANING DIVISION. — Frank H. Haynes, *Deputy Superintendent from February 5, 1900, to April 16, 1901.*
Resigned April 16, 1901.

STREET CLEANING DIVISION. — Frank C. Shepard, *Deputy Superintendent from April 16, 1901, to January 22, 1902.*

STREET CLEANING DIVISION. — Joseph J. Norton, *Deputy Superintendent from January 22, 1902, to the present time.*

STREET WATERING DIVISION. — M. Edward Libby, *Deputy Superintendent from March 6, 1895, to March 1, 1896.*

STREET WATERING DIVISION. — Thomas J. Finneran, *Deputy Superintendent from March 1, 1896, to February 3, 1900.*

STREET WATERING DIVISION. — Frederick Hammond, *Deputy Superintendent from February 5, 1900, to January 22, 1902.*

STREET WATERING DIVISION. — Ambrose Woods, *Deputy Superintendent from January 22, 1902, to the present time.*

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* Died January 12, 1894.

BOSTON AND CAMBRIDGE BRIDGES. — Henry H. Carter, *ex-officio, Commissioner for Boston, until December 8, 1894.*
Charles R. Cutter, *ex-officio, Acting from December 8, 1894, to January 14, 1895.*
Bertrand T. Wheeler, *ex-officio, from January 14, 1895, to February 4, 1896.*
Benjamin W. Wells, *from February 4, 1896, to February 1, 1900; ex-officio, to May 26, 1898.**
Bertrand T. Wheeler, *from February 2, 1900, to November 25, 1901.*
Guy C. Emerson, *from November 25, 1901, to January 14, 1902.*
James Donovan, *from January 14, 1902, to the present time.*
William J. Marvin, *Commissioner for Cambridge.*

* See Chap. 467, Acts of 1898.

Street Department.

NAME OF DOCUMENT.	For Year.	Pub. Year.	No. of Doc.
Annual report, Executive Dept. Part II.....	1891	1892	36
" " " " "	1892	1893	34
" " " " "	1893	1894	34
" " " " "	1894	1895	34
" " " " "	1895	1896	29
" " " " "	1896	1897	29
" " " " "	1897	1898	34
" " " " "	1898	1899	35
" " " " "	1899	1900	38
" " " " "	1900	1901	38
" " " " "	1901	1902	38
" " " " "	1902	1903	40
" " " " "	1903	1904	40

ALLIED PRINTING TRADES UNION LABEL COUNCIL BOSTON, MASS.
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